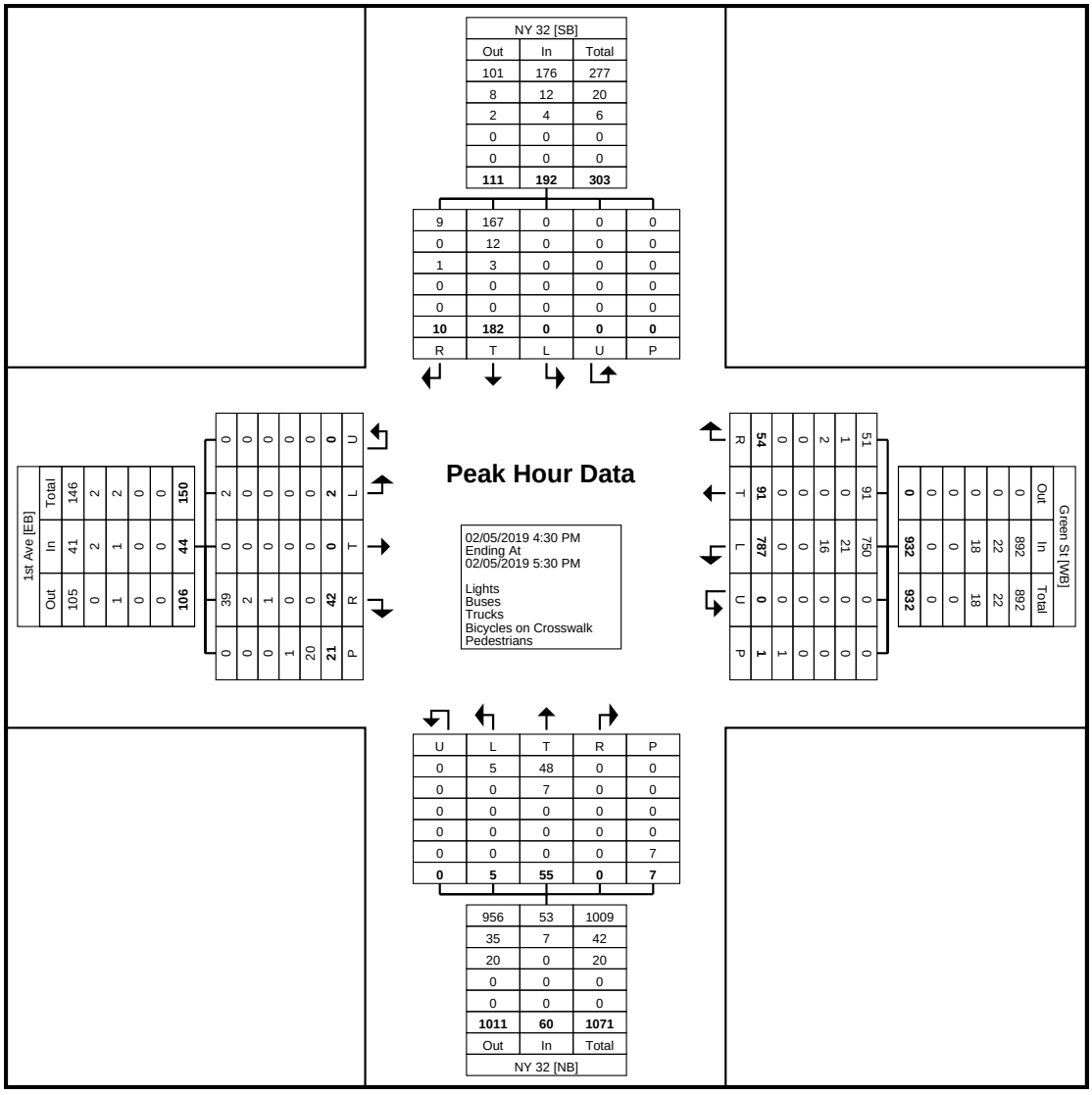
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Turning Movement Peak Hour Data Plot (4:30 PM)

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Albany, NY
NY 32/NY 144
Tuesday, February 5, 2019
Location: 42.619459, -73.766358

Count Name: NY 32 / NY 144
Site Code: Glenmont, New York
Start Date: 02/05/2019

Turning Movement Data

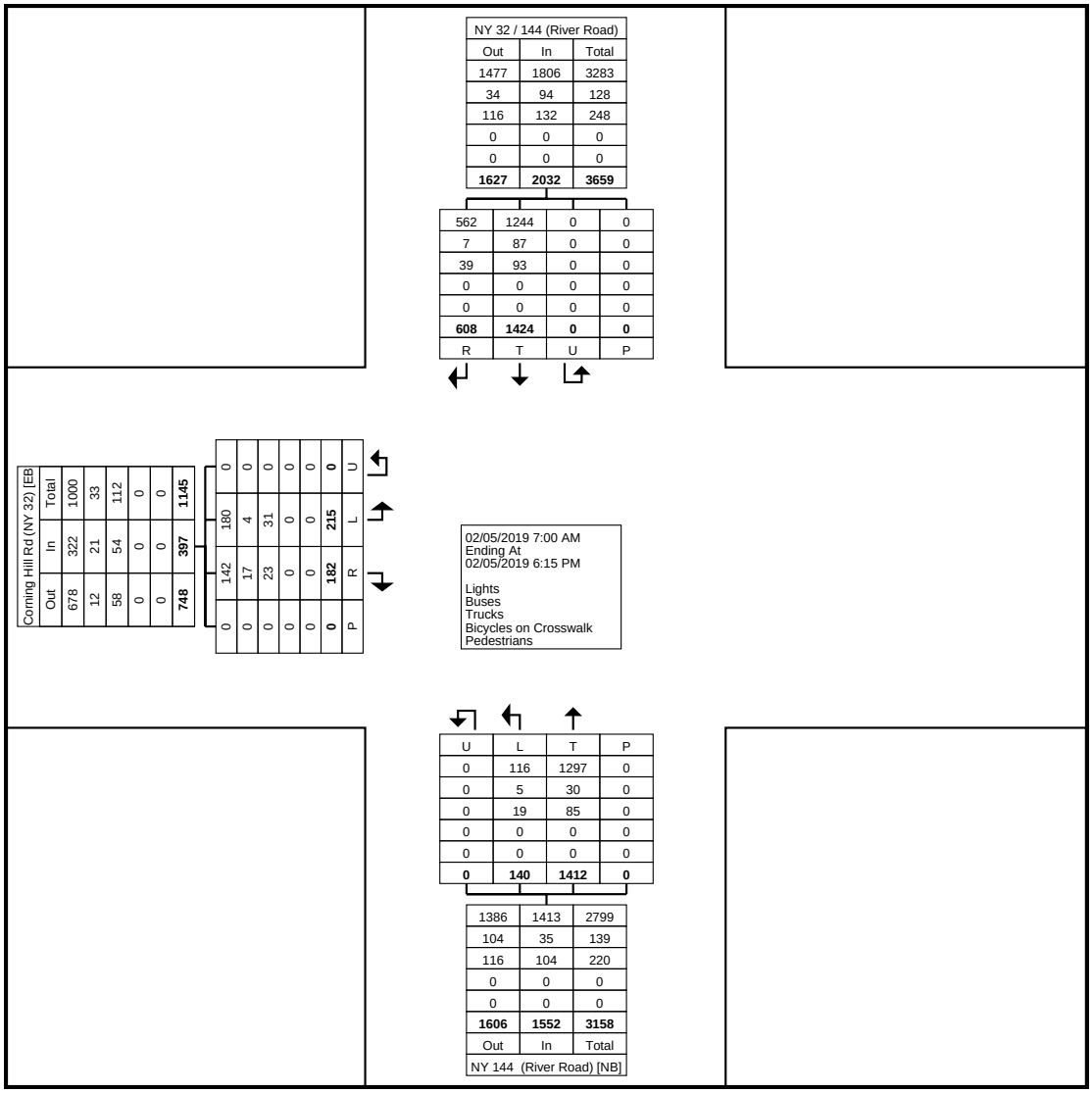
Start Time	Corning Hill Rd (NY 32) Eastbound					NY 144 (River Road) Northbound					NY 32 / 144 (River Road) Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	17	6	0	0	23	10	94	0	0	104	43	10	0	0	53	180
7:15 AM	20	4	0	0	24	8	121	0	0	129	40	17	0	0	57	210
7:30 AM	27	12	0	0	39	15	170	0	0	185	38	18	0	0	56	280
7:45 AM	22	11	0	0	33	14	164	0	0	178	57	6	0	0	63	274
Hourly Total	86	33	0	0	119	47	549	0	0	596	178	51	0	0	229	944
8:00 AM	21	13	0	0	34	7	122	0	0	129	43	10	0	0	53	216
8:15 AM	22	7	0	0	29	14	130	0	0	144	53	13	0	0	66	239
8:30 AM	18	13	0	0	31	5	102	0	0	107	38	16	0	0	54	192
8:45 AM	16	5	0	0	21	4	108	0	0	112	35	20	0	0	55	188
Hourly Total	77	38	0	0	115	30	462	0	0	492	169	59	0	0	228	835
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	8	7	0	0	15	7	59	0	0	66	104	64	0	0	168	249
4:15 PM	2	19	0	0	21	5	60	0	0	65	140	54	0	0	194	280
4:30 PM	8	16	0	0	24	9	45	0	0	54	142	59	0	0	201	279
4:45 PM	7	14	0	0	21	12	56	0	0	68	143	87	0	0	230	319
Hourly Total	25	56	0	0	81	33	220	0	0	253	529	264	0	0	793	1127
5:00 PM	9	15	0	0	24	9	49	0	0	58	131	67	0	0	198	280
5:15 PM	3	16	0	0	19	10	48	0	0	58	166	74	0	0	240	317
5:30 PM	7	11	0	0	18	5	49	0	0	54	139	53	0	0	192	264
5:45 PM	8	13	0	0	21	6	35	0	0	41	112	40	0	0	152	214
Hourly Total	27	55	0	0	82	30	181	0	0	211	548	234	0	0	782	1075
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	215	182	0	0	397	140	1412	0	0	1552	1424	608	0	0	2032	3981
Approach %	54.2	45.8	0.0	-	-	9.0	91.0	0.0	-	-	70.1	29.9	0.0	-	-	-
Total %	5.4	4.6	0.0	-	10.0	3.5	35.5	0.0	-	39.0	35.8	15.3	0.0	-	51.0	-
Lights	180	142	0	-	322	116	1297	0	-	1413	1244	562	0	-	1806	3541
% Lights	83.7	78.0	-	-	81.1	82.9	91.9	-	-	91.0	87.4	92.4	-	-	88.9	88.9
Buses	4	17	0	-	21	5	30	0	-	35	87	7	0	-	94	150
% Buses	1.9	9.3	-	-	5.3	3.6	2.1	-	-	2.3	6.1	1.2	-	-	4.6	3.8
Trucks	31	23	0	-	54	19	85	0	-	104	93	39	0	-	132	290
% Trucks	14.4	12.6	-	-	13.6	13.6	6.0	-	-	6.7	6.5	6.4	-	-	6.5	7.3
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Albany, NY
NY 32/NY 144
Tuesday, February 5, 2019
Location: 42.619459, -73.766358

Count Name: NY 32 / NY 144
Site Code: Glenmont, New York
Start Date: 02/05/2019



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Albany, NY
NY 32/NY 144
Tuesday, February 5, 2019
Location: 42.619459, -73.766358

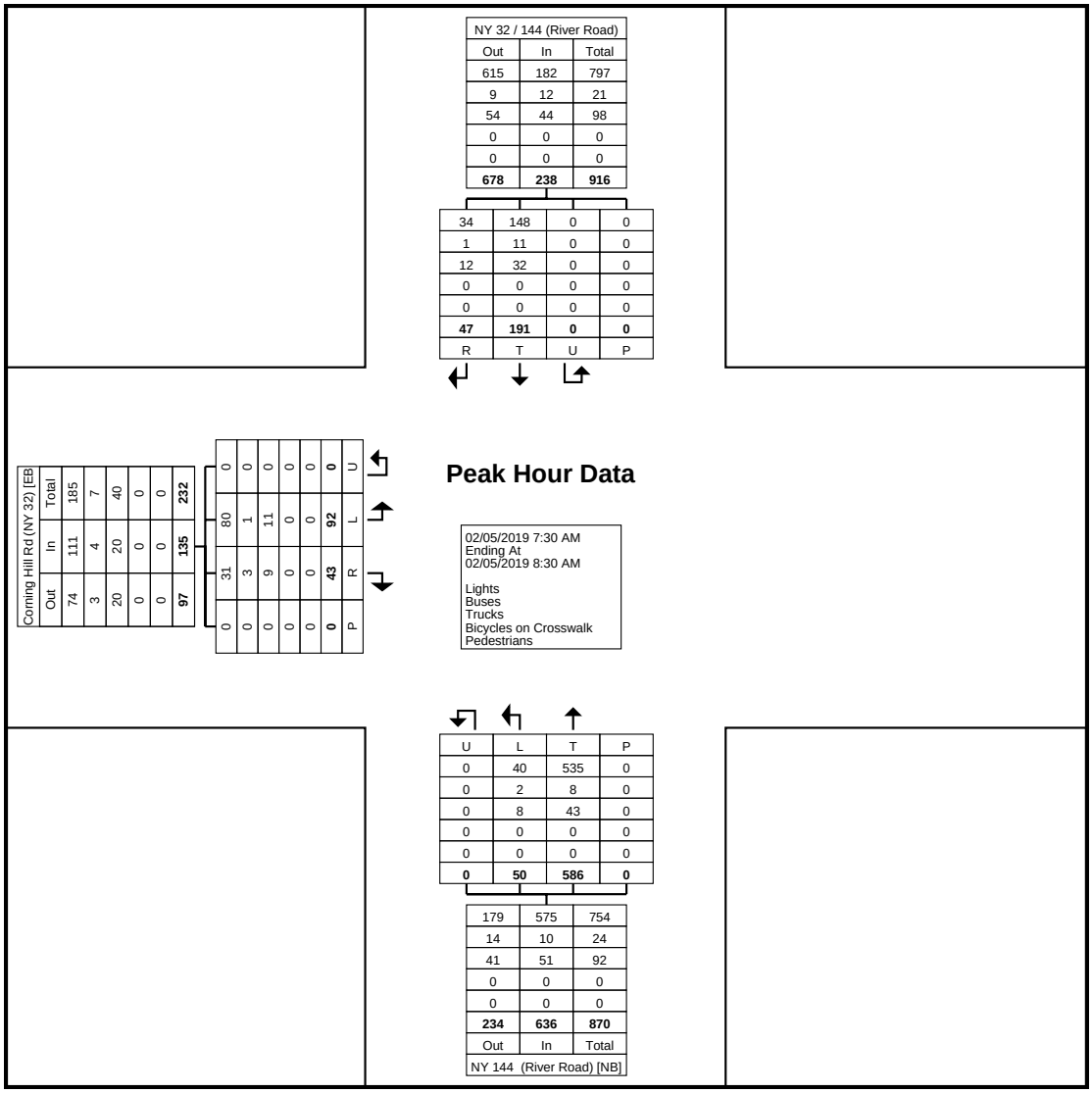
Count Name: NY 32 / NY 144
Site Code: Glenmont, New York
Start Date: 02/05/2019

Turning Movement Peak Hour Data (7:30 AM)

Start Time	Corning Hill Rd (NY 32) Eastbound					NY 144 (River Road) Northbound					NY 32 / 144 (River Road) Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:30 AM	27	12	0	0	39	15	170	0	0	185	38	18	0	0	56	280
7:45 AM	22	11	0	0	33	14	164	0	0	178	57	6	0	0	63	274
8:00 AM	21	13	0	0	34	7	122	0	0	129	43	10	0	0	53	216
8:15 AM	22	7	0	0	29	14	130	0	0	144	53	13	0	0	66	239
Total	92	43	0	0	135	50	586	0	0	636	191	47	0	0	238	1009
Approach %	68.1	31.9	0.0	-	-	7.9	92.1	0.0	-	-	80.3	19.7	0.0	-	-	-
Total %	9.1	4.3	0.0	-	13.4	5.0	58.1	0.0	-	63.0	18.9	4.7	0.0	-	23.6	-
PHF	0.852	0.827	0.000	-	0.865	0.833	0.862	0.000	-	0.859	0.838	0.653	0.000	-	0.902	0.901
Lights	80	31	0	-	111	40	535	0	-	575	148	34	0	-	182	868
% Lights	87.0	72.1	-	-	82.2	80.0	91.3	-	-	90.4	77.5	72.3	-	-	76.5	86.0
Buses	1	3	0	-	4	2	8	0	-	10	11	1	0	-	12	26
% Buses	1.1	7.0	-	-	3.0	4.0	1.4	-	-	1.6	5.8	2.1	-	-	5.0	2.6
Trucks	11	9	0	-	20	8	43	0	-	51	32	12	0	-	44	115
% Trucks	12.0	20.9	-	-	14.8	16.0	7.3	-	-	8.0	16.8	25.5	-	-	18.5	11.4
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Albany, NY
NY 32/NY 144
Tuesday, February 5, 2019
Location: 42.619459, -73.766358

Count Name: NY 32 / NY 144
Site Code: Glenmont, New York
Start Date: 02/05/2019



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Albany, NY
NY 32/NY 144
Tuesday, February 5, 2019
Location: 42.619459, -73.766358

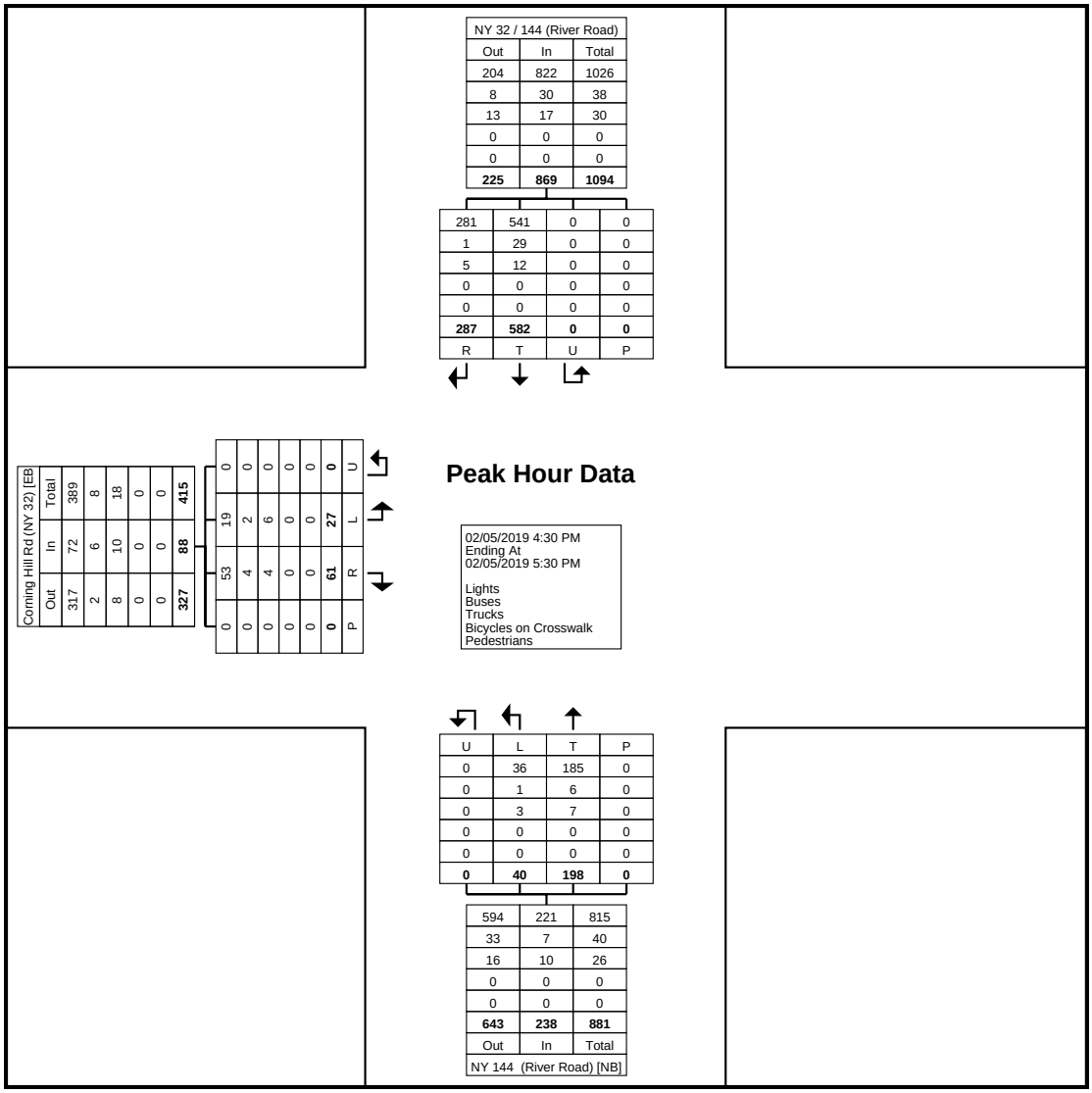
Count Name: NY 32 / NY 144
Site Code: Glenmont, New York
Start Date: 02/05/2019

Turning Movement Peak Hour Data (4:30 PM)

Start Time	Corning Hill Rd (NY 32) Eastbound					NY 144 (River Road) Northbound					NY 32 / 144 (River Road) Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
4:30 PM	8	16	0	0	24	9	45	0	0	54	142	59	0	0	201	279
4:45 PM	7	14	0	0	21	12	56	0	0	68	143	87	0	0	230	319
5:00 PM	9	15	0	0	24	9	49	0	0	58	131	67	0	0	198	280
5:15 PM	3	16	0	0	19	10	48	0	0	58	166	74	0	0	240	317
Total	27	61	0	0	88	40	198	0	0	238	582	287	0	0	869	1195
Approach %	30.7	69.3	0.0	-	-	16.8	83.2	0.0	-	-	67.0	33.0	0.0	-	-	-
Total %	2.3	5.1	0.0	-	7.4	3.3	16.6	0.0	-	19.9	48.7	24.0	0.0	-	72.7	-
PHF	0.750	0.953	0.000	-	0.917	0.833	0.884	0.000	-	0.875	0.877	0.825	0.000	-	0.905	0.937
Lights	19	53	0	-	72	36	185	0	-	221	541	281	0	-	822	1115
% Lights	70.4	86.9	-	-	81.8	90.0	93.4	-	-	92.9	93.0	97.9	-	-	94.6	93.3
Buses	2	4	0	-	6	1	6	0	-	7	29	1	0	-	30	43
% Buses	7.4	6.6	-	-	6.8	2.5	3.0	-	-	2.9	5.0	0.3	-	-	3.5	3.6
Trucks	6	4	0	-	10	3	7	0	-	10	12	5	0	-	17	37
% Trucks	22.2	6.6	-	-	11.4	7.5	3.5	-	-	4.2	2.1	1.7	-	-	2.0	3.1
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Albany, NY
NY 32/NY 144
Tuesday, February 5, 2019
Location: 42.619459, -73.766358

Count Name: NY 32 / NY 144
Site Code: Glenmont, New York
Start Date: 02/05/2019



Turning Movement Peak Hour Data Plot (4:30 PM)

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Port of Albany, NY
NY 32/Port Street
Tuesday, February 26, 2019
Location: 42.62119, -73.767051

Count Name: NY 32/ Port Street
Site Code: Albany, New York
Start Date: 02/26/2019

Turning Movement Data

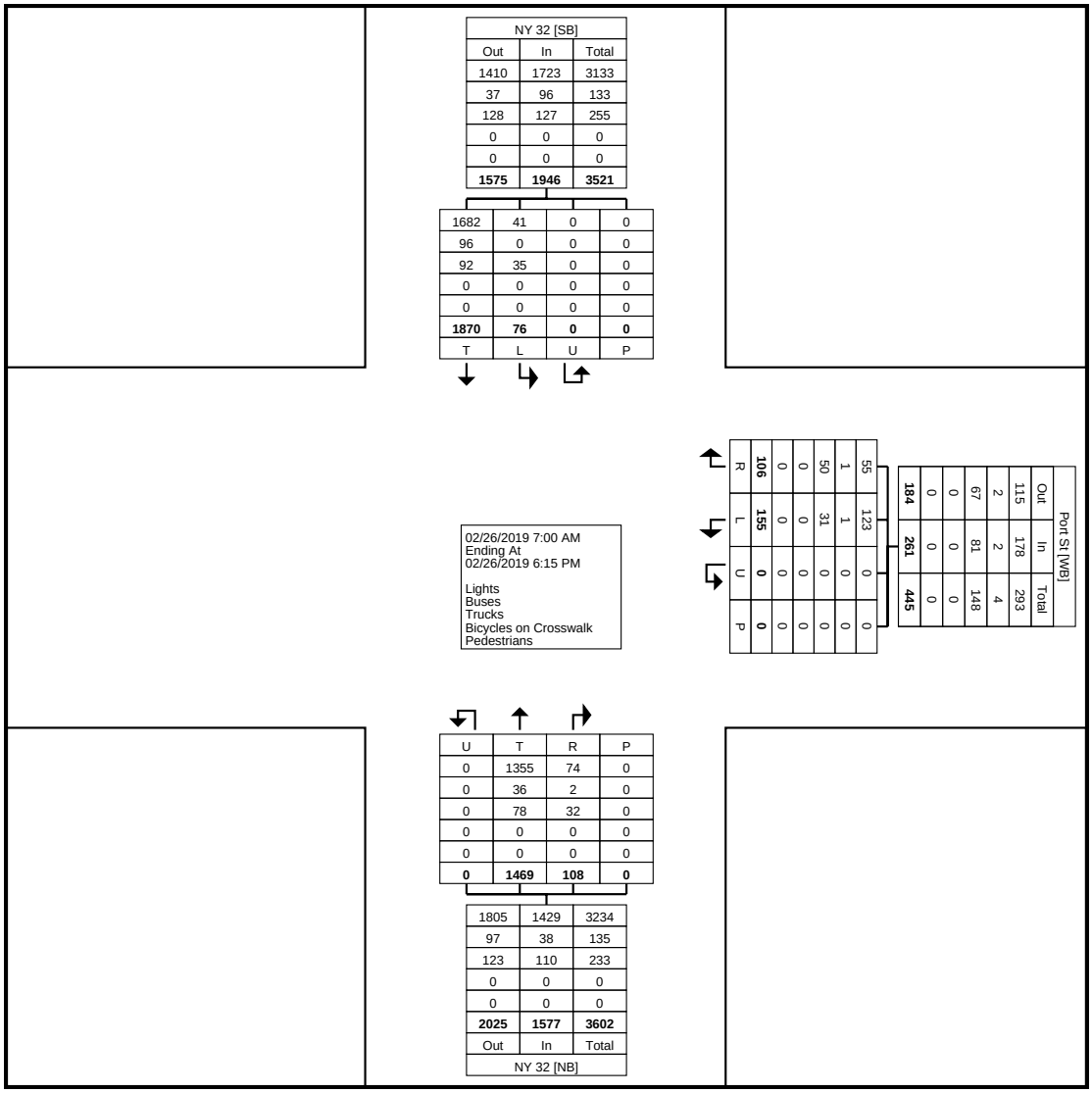
Start Time	Port St Westbound					NY 32 Northbound					NY 32 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Int. Total
7:00 AM	6	3	0	0	9	98	10	0	0	108	7	55	0	0	62	179
7:15 AM	4	10	0	0	14	133	12	0	0	145	6	44	0	0	50	209
7:30 AM	5	2	0	0	7	184	5	0	0	189	9	62	0	0	71	267
7:45 AM	2	7	0	0	9	172	13	0	0	185	6	47	0	0	53	247
Hourly Total	17	22	0	0	39	587	40	0	0	627	28	208	0	0	236	902
8:00 AM	4	8	0	0	12	132	4	0	0	136	12	62	0	0	74	222
8:15 AM	6	11	0	0	17	129	14	0	0	143	4	39	0	0	43	203
8:30 AM	6	13	0	0	19	122	9	0	0	131	12	49	0	0	61	211
8:45 AM	5	7	0	0	12	104	13	0	0	117	9	62	0	0	71	200
Hourly Total	21	39	0	0	60	487	40	0	0	527	37	212	0	0	249	836
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	23	18	0	0	41	50	11	0	0	61	1	170	0	0	171	273
4:15 PM	17	8	0	0	25	41	3	0	0	44	1	181	0	0	182	251
4:30 PM	13	4	0	0	17	54	1	0	0	55	1	192	0	0	193	265
4:45 PM	19	3	0	0	22	80	3	0	0	83	2	199	0	0	201	306
Hourly Total	72	33	0	0	105	225	18	0	0	243	5	742	0	0	747	1095
5:00 PM	15	2	0	0	17	53	6	0	0	59	2	220	0	0	222	298
5:15 PM	17	2	0	0	19	41	2	0	0	43	0	223	0	0	223	285
5:30 PM	9	6	0	0	15	45	2	0	0	47	2	136	0	0	138	200
5:45 PM	4	2	0	0	6	31	0	0	0	31	2	129	0	0	131	168
Hourly Total	45	12	0	0	57	170	10	0	0	180	6	708	0	0	714	951
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	155	106	0	0	261	1469	108	0	0	1577	76	1870	0	0	1946	3784
Approach %	59.4	40.6	0.0	-	-	93.2	6.8	0.0	-	-	3.9	96.1	0.0	-	-	-
Total %	4.1	2.8	0.0	-	6.9	38.8	2.9	0.0	-	41.7	2.0	49.4	0.0	-	51.4	-
Lights	123	55	0	-	178	1355	74	0	-	1429	41	1682	0	-	1723	3330
% Lights	79.4	51.9	-	-	68.2	92.2	68.5	-	-	90.6	53.9	89.9	-	-	88.5	88.0
Buses	1	1	0	-	2	36	2	0	-	38	0	96	0	-	96	136
% Buses	0.6	0.9	-	-	0.8	2.5	1.9	-	-	2.4	0.0	5.1	-	-	4.9	3.6
Trucks	31	50	0	-	81	78	32	0	-	110	35	92	0	-	127	318
% Trucks	20.0	47.2	-	-	31.0	5.3	29.6	-	-	7.0	46.1	4.9	-	-	6.5	8.4
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Port of Albany, NY
NY 32/Port Street
Tuesday, February 26, 2019
Location: 42.62119, -73.767051

Count Name: NY 32/ Port Street
Site Code: Albany, New York
Start Date: 02/26/2019



Turning Movement Data Plot

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Port of Albany, NY
NY 32/Port Street
Tuesday, February 26, 2019
Location: 42.62119, -73.767051

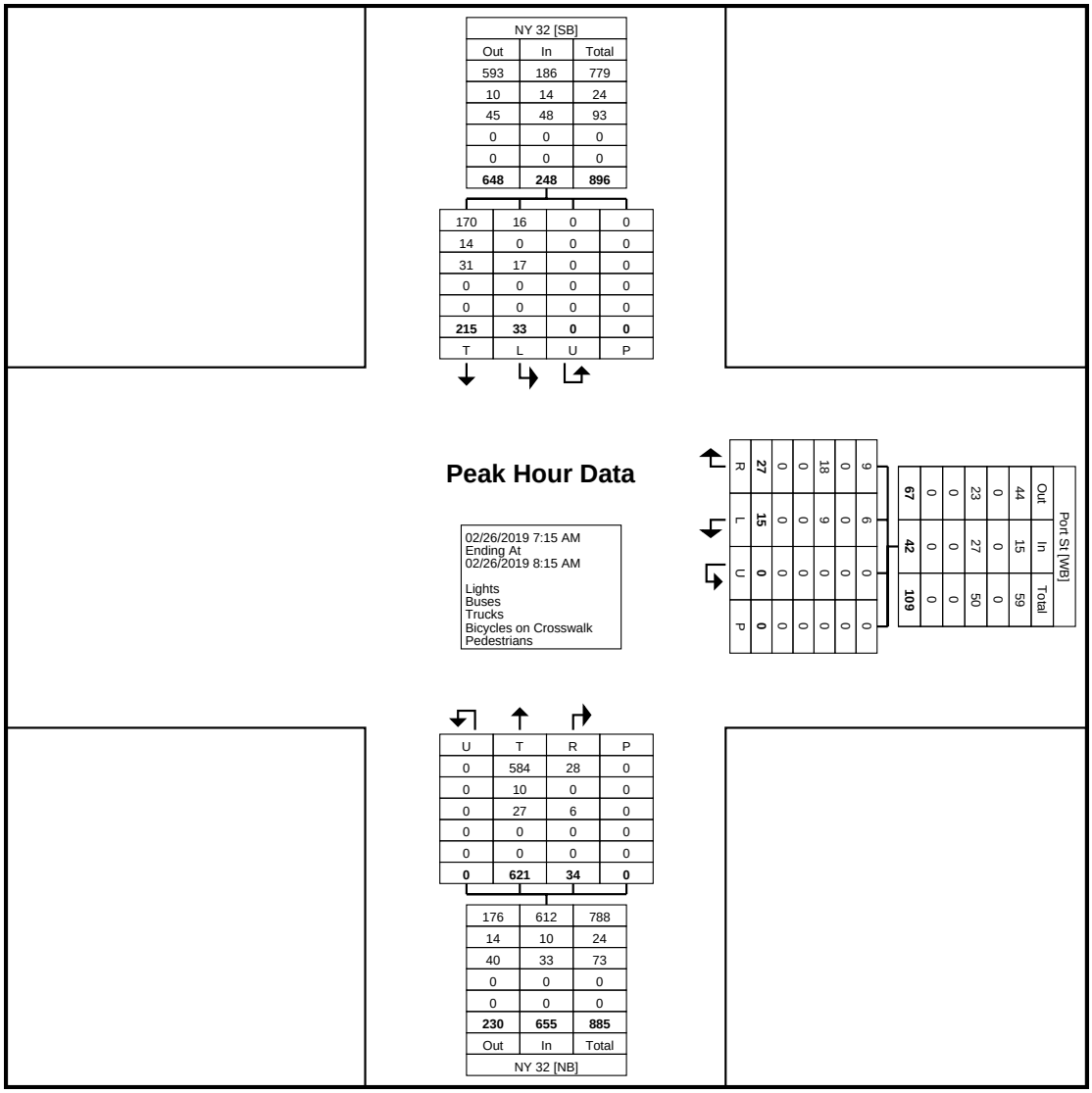
Count Name: NY 32/ Port Street
Site Code: Albany, New York
Start Date: 02/26/2019

Turning Movement Peak Hour Data (7:15 AM)

Start Time	Port St Westbound					NY 32 Northbound					NY 32 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Int. Total
7:15 AM	4	10	0	0	14	133	12	0	0	145	6	44	0	0	50	209
7:30 AM	5	2	0	0	7	184	5	0	0	189	9	62	0	0	71	267
7:45 AM	2	7	0	0	9	172	13	0	0	185	6	47	0	0	53	247
8:00 AM	4	8	0	0	12	132	4	0	0	136	12	62	0	0	74	222
Total	15	27	0	0	42	621	34	0	0	655	33	215	0	0	248	945
Approach %	35.7	64.3	0.0	-	-	94.8	5.2	0.0	-	-	13.3	86.7	0.0	-	-	-
Total %	1.6	2.9	0.0	-	4.4	65.7	3.6	0.0	-	69.3	3.5	22.8	0.0	-	26.2	-
PHF	0.750	0.675	0.000	-	0.750	0.844	0.654	0.000	-	0.866	0.688	0.867	0.000	-	0.838	0.885
Lights	6	9	0	-	15	584	28	0	-	612	16	170	0	-	186	813
% Lights	40.0	33.3	-	-	35.7	94.0	82.4	-	-	93.4	48.5	79.1	-	-	75.0	86.0
Buses	0	0	0	-	0	10	0	0	-	10	0	14	0	-	14	24
% Buses	0.0	0.0	-	-	0.0	1.6	0.0	-	-	1.5	0.0	6.5	-	-	5.6	2.5
Trucks	9	18	0	-	27	27	6	0	-	33	17	31	0	-	48	108
% Trucks	60.0	66.7	-	-	64.3	4.3	17.6	-	-	5.0	51.5	14.4	-	-	19.4	11.4
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Port of Albany, NY
NY 32/Port Street
Tuesday, February 26, 2019
Location: 42.62119, -73.767051

Count Name: NY 32/ Port Street
Site Code: Albany, New York
Start Date: 02/26/2019



Turning Movement Peak Hour Data Plot (7:15 AM)

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Port of Albany, NY
NY 32/Port Street
Tuesday, February 26, 2019
Location: 42.62119, -73.767051

Count Name: NY 32/ Port Street
Site Code: Albany, New York
Start Date: 02/26/2019

Turning Movement Peak Hour Data (4:30 PM)

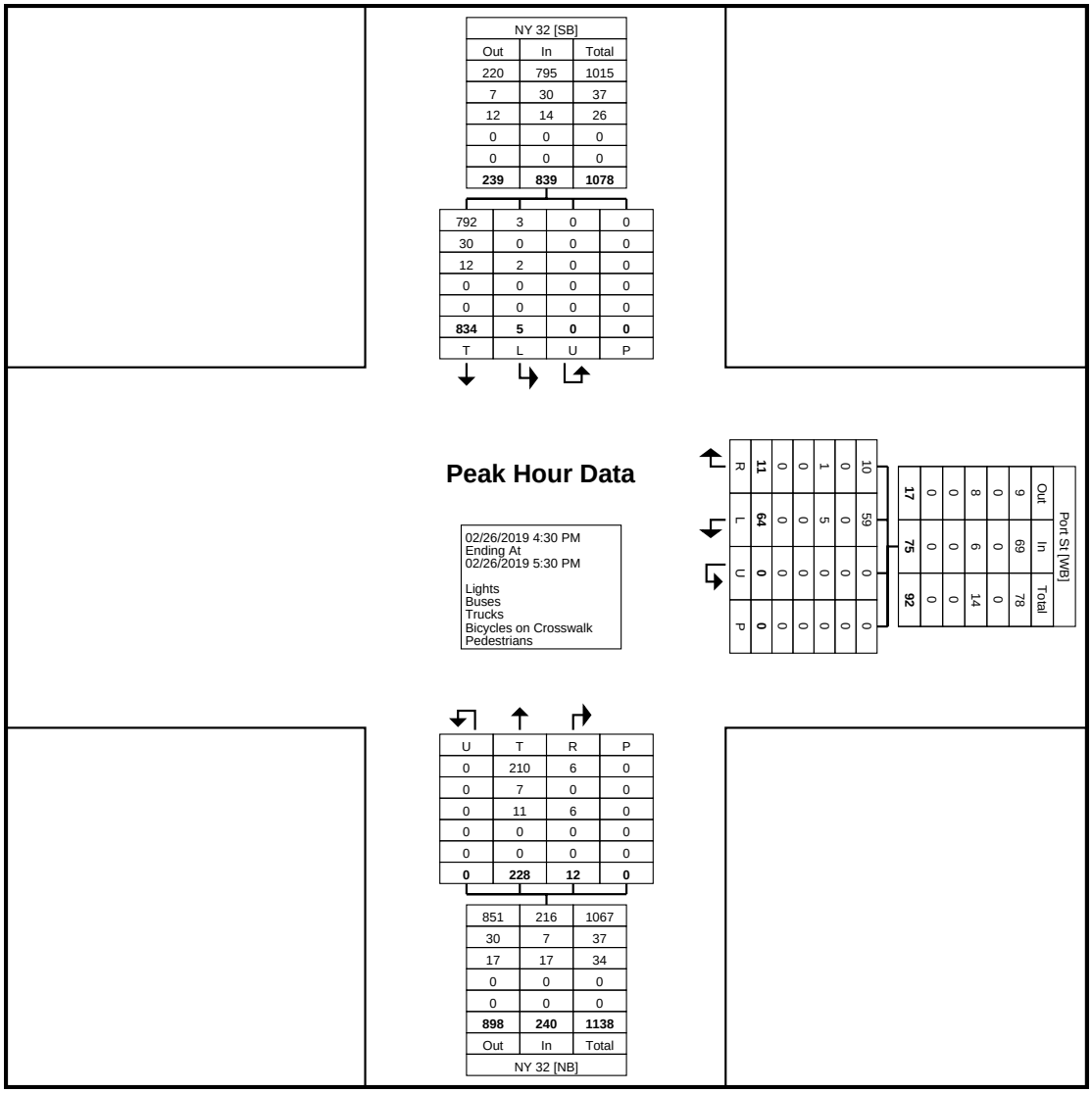
Start Time	Port St Westbound					NY 32 Northbound					NY 32 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Int. Total
4:30 PM	13	4	0	0	17	54	1	0	0	55	1	192	0	0	193	265
4:45 PM	19	3	0	0	22	80	3	0	0	83	2	199	0	0	201	306
5:00 PM	15	2	0	0	17	53	6	0	0	59	2	220	0	0	222	298
5:15 PM	17	2	0	0	19	41	2	0	0	43	0	223	0	0	223	285
Total	64	11	0	0	75	228	12	0	0	240	5	834	0	0	839	1154
Approach %	85.3	14.7	0.0	-	-	95.0	5.0	0.0	-	-	0.6	99.4	0.0	-	-	-
Total %	5.5	1.0	0.0	-	6.5	19.8	1.0	0.0	-	20.8	0.4	72.3	0.0	-	72.7	-
PHF	0.842	0.688	0.000	-	0.852	0.713	0.500	0.000	-	0.723	0.625	0.935	0.000	-	0.941	0.943
Lights	59	10	0	-	69	210	6	0	-	216	3	792	0	-	795	1080
% Lights	92.2	90.9	-	-	92.0	92.1	50.0	-	-	90.0	60.0	95.0	-	-	94.8	93.6
Buses	0	0	0	-	0	7	0	0	-	7	0	30	0	-	30	37
% Buses	0.0	0.0	-	-	0.0	3.1	0.0	-	-	2.9	0.0	3.6	-	-	3.6	3.2
Trucks	5	1	0	-	6	11	6	0	-	17	2	12	0	-	14	37
% Trucks	7.8	9.1	-	-	8.0	4.8	50.0	-	-	7.1	40.0	1.4	-	-	1.7	3.2
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Port of Albany, NY
NY 32/Port Street
Tuesday, February 26, 2019
Location: 42.62119, -73.767051

Count Name: NY 32/ Port Street
Site Code: Albany, New York
Start Date: 02/26/2019



Turning Movement Peak Hour Data Plot (4:30 PM)

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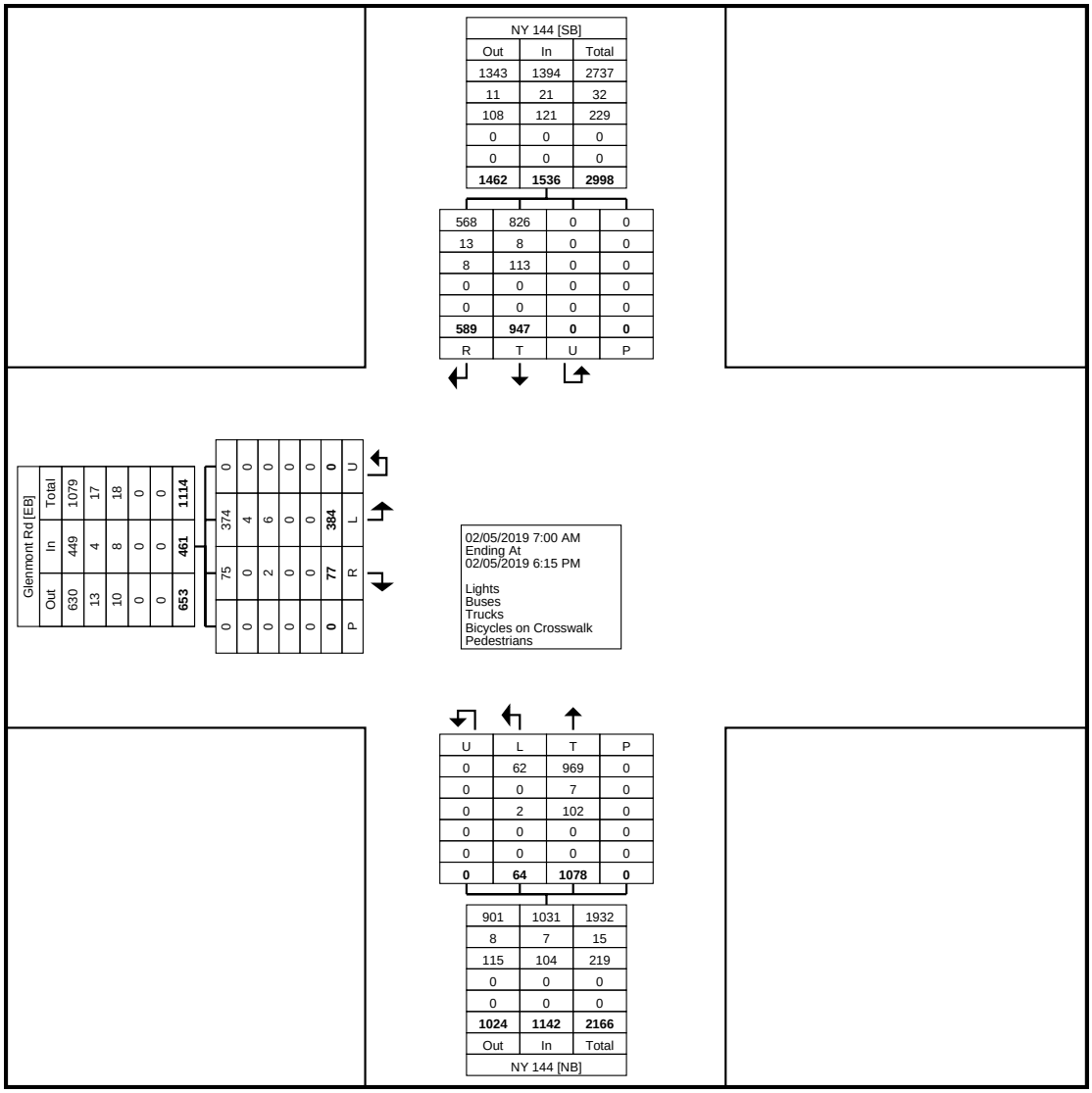
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Albany, NY
NY 144 / Glenmont Road
Tuesday, February 5, 2019
Location: 42.604997, -73.769906

Count Name: NY 144 / Glenmont Rd
Site Code: Glenmont, New York
Start Date: 02/05/2019

Turning Movement Data

Start Time	Glenmont Rd Eastbound					NY 144 Northbound					NY 144 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	22	5	0	0	27	2	70	0	0	72	45	9	0	0	54	153
7:15 AM	27	1	0	0	28	2	131	0	0	133	32	12	0	0	44	205
7:30 AM	43	1	0	0	44	4	148	0	0	152	41	10	0	0	51	247
7:45 AM	44	6	0	0	50	7	105	0	0	112	49	17	0	0	66	228
Hourly Total	136	13	0	0	149	15	454	0	0	469	167	48	0	0	215	833
8:00 AM	39	7	0	0	46	4	101	0	0	105	35	17	0	0	52	203
8:15 AM	45	2	0	0	47	3	68	0	0	71	39	11	0	0	50	168
8:30 AM	48	4	0	0	52	5	76	0	0	81	27	16	0	0	43	176
8:45 AM	23	3	0	0	26	1	67	0	0	68	20	12	0	0	32	126
Hourly Total	155	16	0	0	171	13	312	0	0	325	121	56	0	0	177	673
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	11	8	0	0	19	2	51	0	0	53	64	50	0	0	114	186
4:15 PM	11	5	0	0	16	4	39	0	0	43	89	68	0	0	157	216
4:30 PM	19	8	0	0	27	3	32	0	0	35	89	61	0	0	150	212
4:45 PM	13	10	0	0	23	5	51	0	0	56	87	57	0	0	144	223
Hourly Total	54	31	0	0	85	14	173	0	0	187	329	236	0	0	565	837
5:00 PM	8	6	0	0	14	3	45	0	0	48	74	60	0	0	134	196
5:15 PM	13	6	0	0	19	9	40	0	0	49	112	78	0	0	190	258
5:30 PM	13	3	0	0	16	4	31	0	0	35	76	63	0	0	139	190
5:45 PM	5	2	0	0	7	6	23	0	0	29	67	48	0	0	115	151
Hourly Total	39	17	0	0	56	22	139	0	0	161	329	249	0	0	578	795
6:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
Grand Total	384	77	0	0	461	64	1078	0	0	1142	947	589	0	0	1536	3139
Approach %	83.3	16.7	0.0	-	-	5.6	94.4	0.0	-	-	61.7	38.3	0.0	-	-	-
Total %	12.2	2.5	0.0	-	14.7	2.0	34.3	0.0	-	36.4	30.2	18.8	0.0	-	48.9	-
Lights	374	75	0	-	449	62	969	0	-	1031	826	568	0	-	1394	2874
% Lights	97.4	97.4	-	-	97.4	96.9	89.9	-	-	90.3	87.2	96.4	-	-	90.8	91.6
Buses	4	0	0	-	4	0	7	0	-	7	8	13	0	-	21	32
% Buses	1.0	0.0	-	-	0.9	0.0	0.6	-	-	0.6	0.8	2.2	-	-	1.4	1.0
Trucks	6	2	0	-	8	2	102	0	-	104	113	8	0	-	121	233
% Trucks	1.6	2.6	-	-	1.7	3.1	9.5	-	-	9.1	11.9	1.4	-	-	7.9	7.4
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Turning Movement Data Plot

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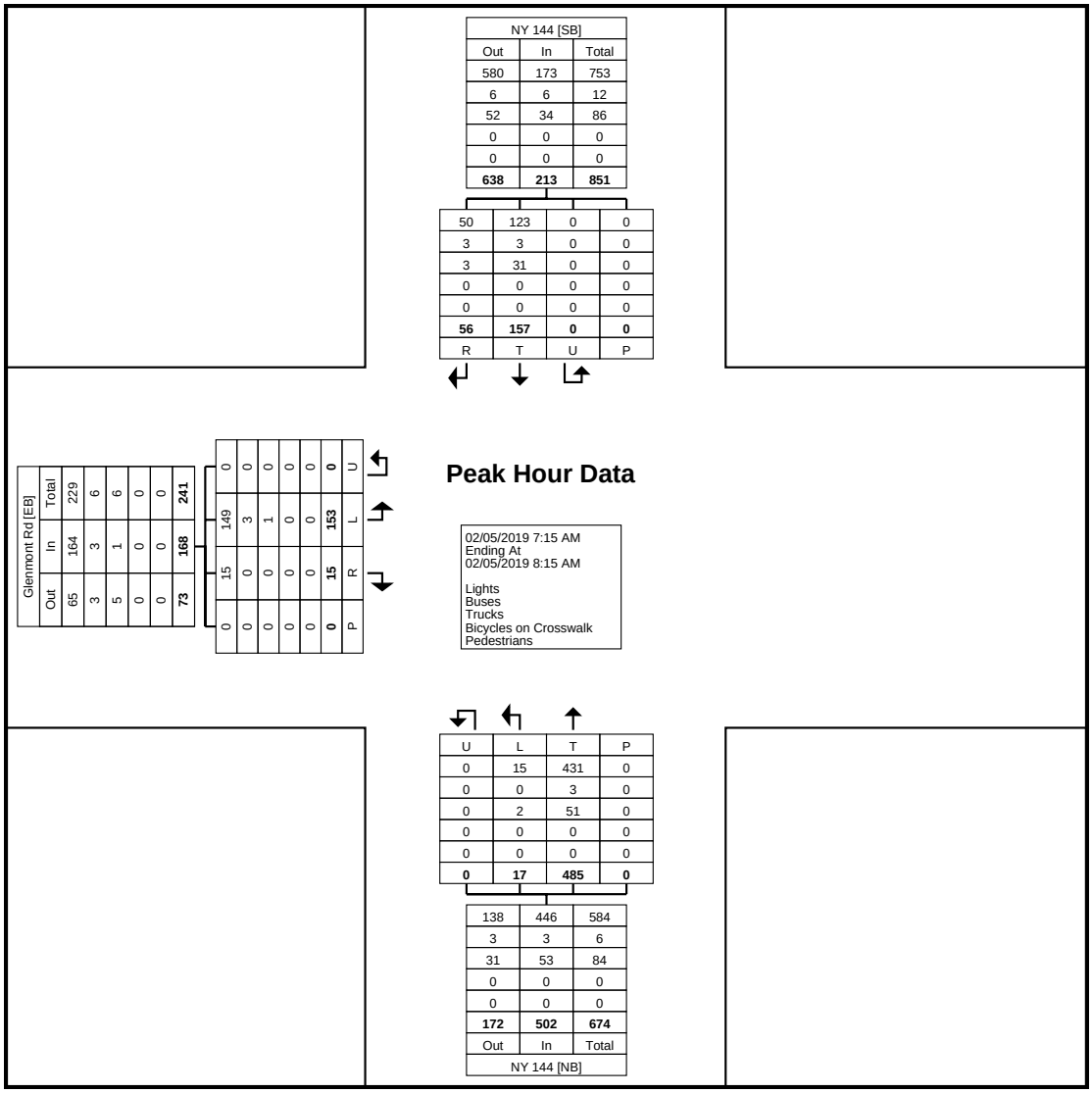
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Albany, NY
NY 144 / Glenmont Road
Tuesday, February 5, 2019
Location: 42.604997, -73.769906

Count Name: NY 144 / Glenmont Rd
Site Code: Glenmont, New York
Start Date: 02/05/2019

Turning Movement Peak Hour Data (7:15 AM)

Start Time	Glenmont Rd Eastbound					NY 144 Northbound					NY 144 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:15 AM	27	1	0	0	28	2	131	0	0	133	32	12	0	0	44	205
7:30 AM	43	1	0	0	44	4	148	0	0	152	41	10	0	0	51	247
7:45 AM	44	6	0	0	50	7	105	0	0	112	49	17	0	0	66	228
8:00 AM	39	7	0	0	46	4	101	0	0	105	35	17	0	0	52	203
Total	153	15	0	0	168	17	485	0	0	502	157	56	0	0	213	883
Approach %	91.1	8.9	0.0	-	-	3.4	96.6	0.0	-	-	73.7	26.3	0.0	-	-	-
Total %	17.3	1.7	0.0	-	19.0	1.9	54.9	0.0	-	56.9	17.8	6.3	0.0	-	24.1	-
PHF	0.869	0.536	0.000	-	0.840	0.607	0.819	0.000	-	0.826	0.801	0.824	0.000	-	0.807	0.894
Lights	149	15	0	-	164	15	431	0	-	446	123	50	0	-	173	783
% Lights	97.4	100.0	-	-	97.6	88.2	88.9	-	-	88.8	78.3	89.3	-	-	81.2	88.7
Buses	3	0	0	-	3	0	3	0	-	3	3	3	0	-	6	12
% Buses	2.0	0.0	-	-	1.8	0.0	0.6	-	-	0.6	1.9	5.4	-	-	2.8	1.4
Trucks	1	0	0	-	1	2	51	0	-	53	31	3	0	-	34	88
% Trucks	0.7	0.0	-	-	0.6	11.8	10.5	-	-	10.6	19.7	5.4	-	-	16.0	10.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Turning Movement Peak Hour Data Plot (7:15 AM)

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184 Baker Rd

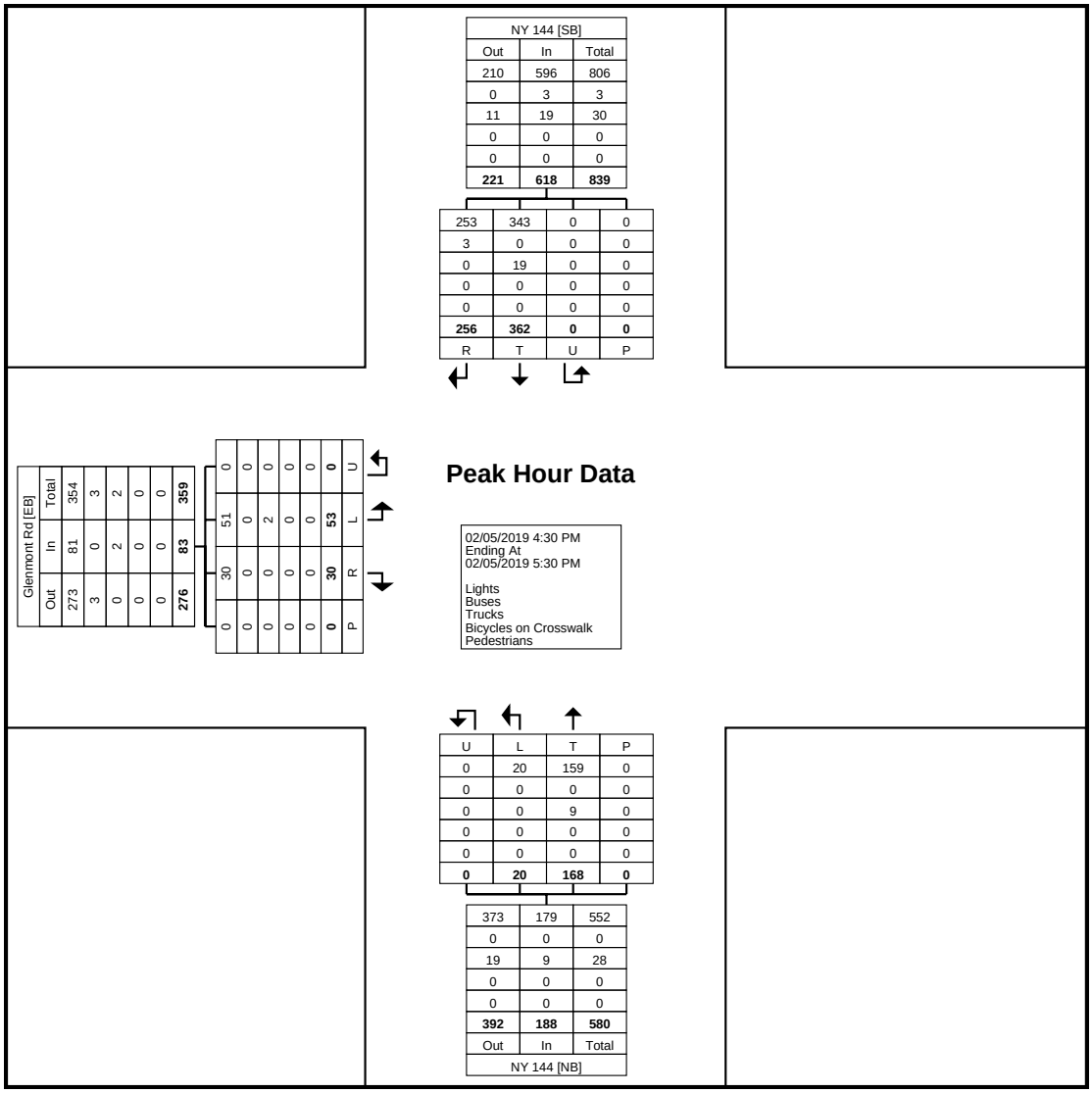
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Albany, NY
NY 144 / Glenmont Road
Tuesday, February 5, 2019
Location: 42.604997, -73.769906

Count Name: NY 144 / Glenmont Rd
Site Code: Glenmont, New York
Start Date: 02/05/2019

Turning Movement Peak Hour Data (4:30 PM)

Start Time	Glenmont Rd Eastbound					NY 144 Northbound					NY 144 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
4:30 PM	19	8	0	0	27	3	32	0	0	35	89	61	0	0	150	212
4:45 PM	13	10	0	0	23	5	51	0	0	56	87	57	0	0	144	223
5:00 PM	8	6	0	0	14	3	45	0	0	48	74	60	0	0	134	196
5:15 PM	13	6	0	0	19	9	40	0	0	49	112	78	0	0	190	258
Total	53	30	0	0	83	20	168	0	0	188	362	256	0	0	618	889
Approach %	63.9	36.1	0.0	-	-	10.6	89.4	0.0	-	-	58.6	41.4	0.0	-	-	-
Total %	6.0	3.4	0.0	-	9.3	2.2	18.9	0.0	-	21.1	40.7	28.8	0.0	-	69.5	-
PHF	0.697	0.750	0.000	-	0.769	0.556	0.824	0.000	-	0.839	0.808	0.821	0.000	-	0.813	0.861
Lights	51	30	0	-	81	20	159	0	-	179	343	253	0	-	596	856
% Lights	96.2	100.0	-	-	97.6	100.0	94.6	-	-	95.2	94.8	98.8	-	-	96.4	96.3
Buses	0	0	0	-	0	0	0	0	-	0	0	3	0	-	3	3
% Buses	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	1.2	-	-	0.5	0.3
Trucks	2	0	0	-	2	0	9	0	-	9	19	0	0	-	19	30
% Trucks	3.8	0.0	-	-	2.4	0.0	5.4	-	-	4.8	5.2	0.0	-	-	3.1	3.4
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Turning Movement Peak Hour Data Plot (4:30 PM)

Albany, NY
NY 144 / NY State Thruway Access
Tuesday, February 5, 2019
Location: 42.534276, -73.778231

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Count Name: NY 144 / New York State Thruway
Site Code: Bethlehem, New York
Start Date: 02/05/2019

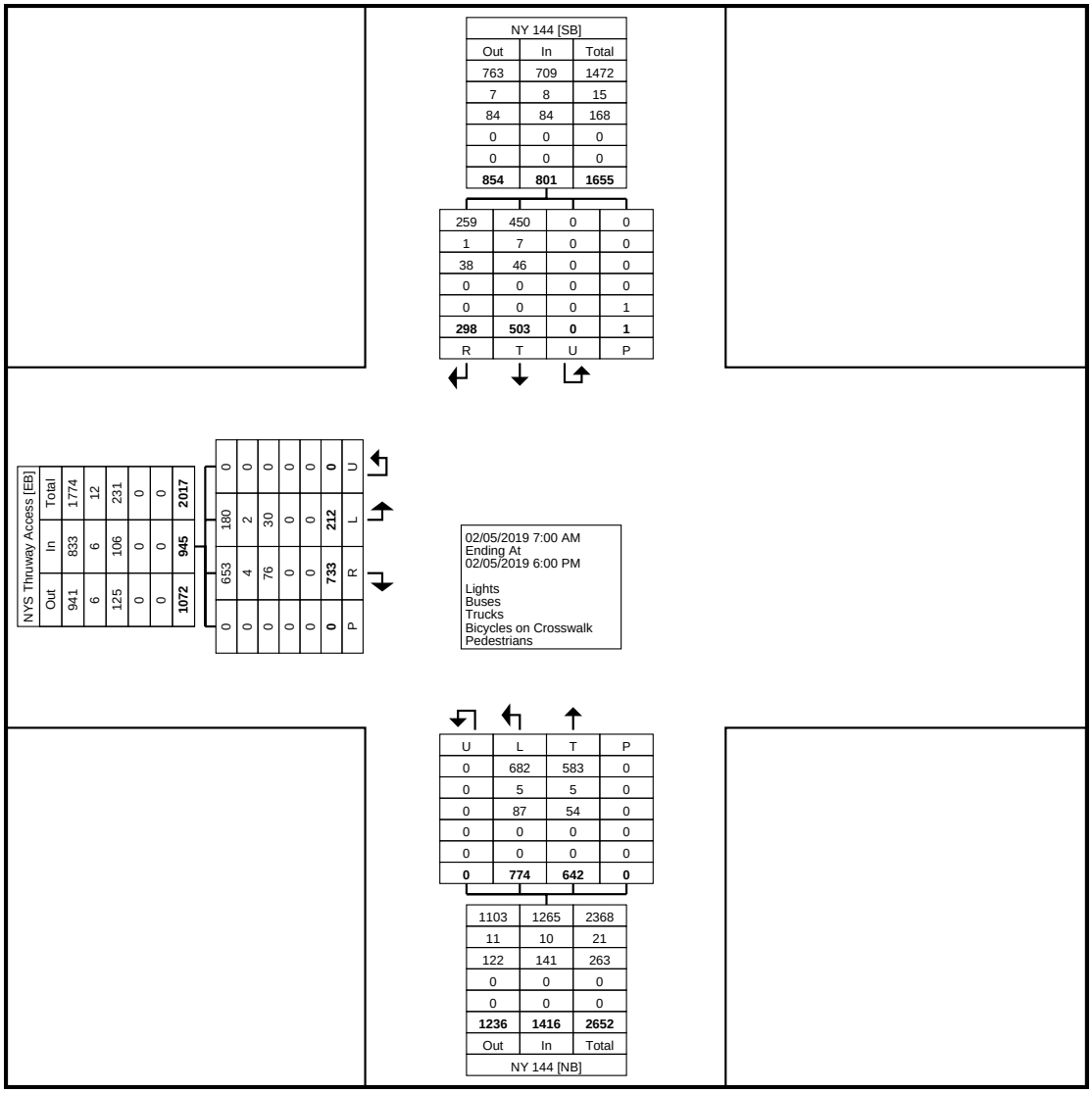
Turning Movement Data

Start Time	NYS Thruway Access Eastbound					NY 144 Northbound					NY 144 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	11	49	0	0	60	87	64	0	0	151	11	20	0	0	31	242
7:15 AM	10	45	0	0	55	74	86	0	0	160	14	29	0	0	43	258
7:30 AM	16	36	0	0	52	68	92	0	0	160	11	33	0	0	44	256
7:45 AM	16	32	0	0	48	57	56	0	0	113	14	33	0	0	47	208
Hourly Total	53	162	0	0	215	286	298	0	0	584	50	115	0	0	165	964
8:00 AM	8	30	0	0	38	74	40	0	0	114	16	28	0	0	44	196
8:15 AM	13	27	0	0	40	53	54	0	0	107	22	19	0	0	41	188
8:30 AM	17	33	0	0	50	55	37	0	0	92	17	9	0	0	26	168
8:45 AM	10	33	0	0	43	28	33	0	0	61	9	12	0	0	21	125
Hourly Total	48	123	0	0	171	210	164	0	0	374	64	68	0	0	132	677
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	11	41	0	0	52	46	26	0	0	72	44	10	0	0	54	178
4:15 PM	13	56	0	0	69	34	22	0	0	56	58	13	0	0	71	196
4:30 PM	12	61	0	0	73	58	27	0	0	85	57	23	0	1	80	238
4:45 PM	17	58	0	0	75	26	29	0	0	55	35	14	0	0	49	179
Hourly Total	53	216	0	0	269	164	104	0	0	268	194	60	0	1	254	791
5:00 PM	12	55	0	0	67	37	21	0	0	58	46	18	0	0	64	189
5:15 PM	18	76	0	0	94	29	25	0	0	54	59	20	0	0	79	227
5:30 PM	12	54	0	0	66	19	16	0	0	35	58	10	0	0	68	169
5:45 PM	16	47	0	0	63	29	14	0	0	43	32	7	0	0	39	145
Hourly Total	58	232	0	0	290	114	76	0	0	190	195	55	0	0	250	730
Grand Total	212	733	0	0	945	774	642	0	0	1416	503	298	0	1	801	3162
Approach %	22.4	77.6	0.0	-	-	54.7	45.3	0.0	-	-	62.8	37.2	0.0	-	-	-
Total %	6.7	23.2	0.0	-	29.9	24.5	20.3	0.0	-	44.8	15.9	9.4	0.0	-	25.3	-
Lights	180	653	0	-	833	682	583	0	-	1265	450	259	0	-	709	2807
% Lights	84.9	89.1	-	-	88.1	88.1	90.8	-	-	89.3	89.5	86.9	-	-	88.5	88.8
Buses	2	4	0	-	6	5	5	0	-	10	7	1	0	-	8	24
% Buses	0.9	0.5	-	-	0.6	0.6	0.8	-	-	0.7	1.4	0.3	-	-	1.0	0.8
Trucks	30	76	0	-	106	87	54	0	-	141	46	38	0	-	84	331
% Trucks	14.2	10.4	-	-	11.2	11.2	8.4	-	-	10.0	9.1	12.8	-	-	10.5	10.5
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

Albany, NY
NY 144 / NY State Thruway Access
Tuesday, February 5, 2019
Location: 42.534276, -73.778231

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Albany, NY
NY 144 / NY State Thruway Access
Tuesday, February 5, 2019
Location: 42.534276, -73.778231

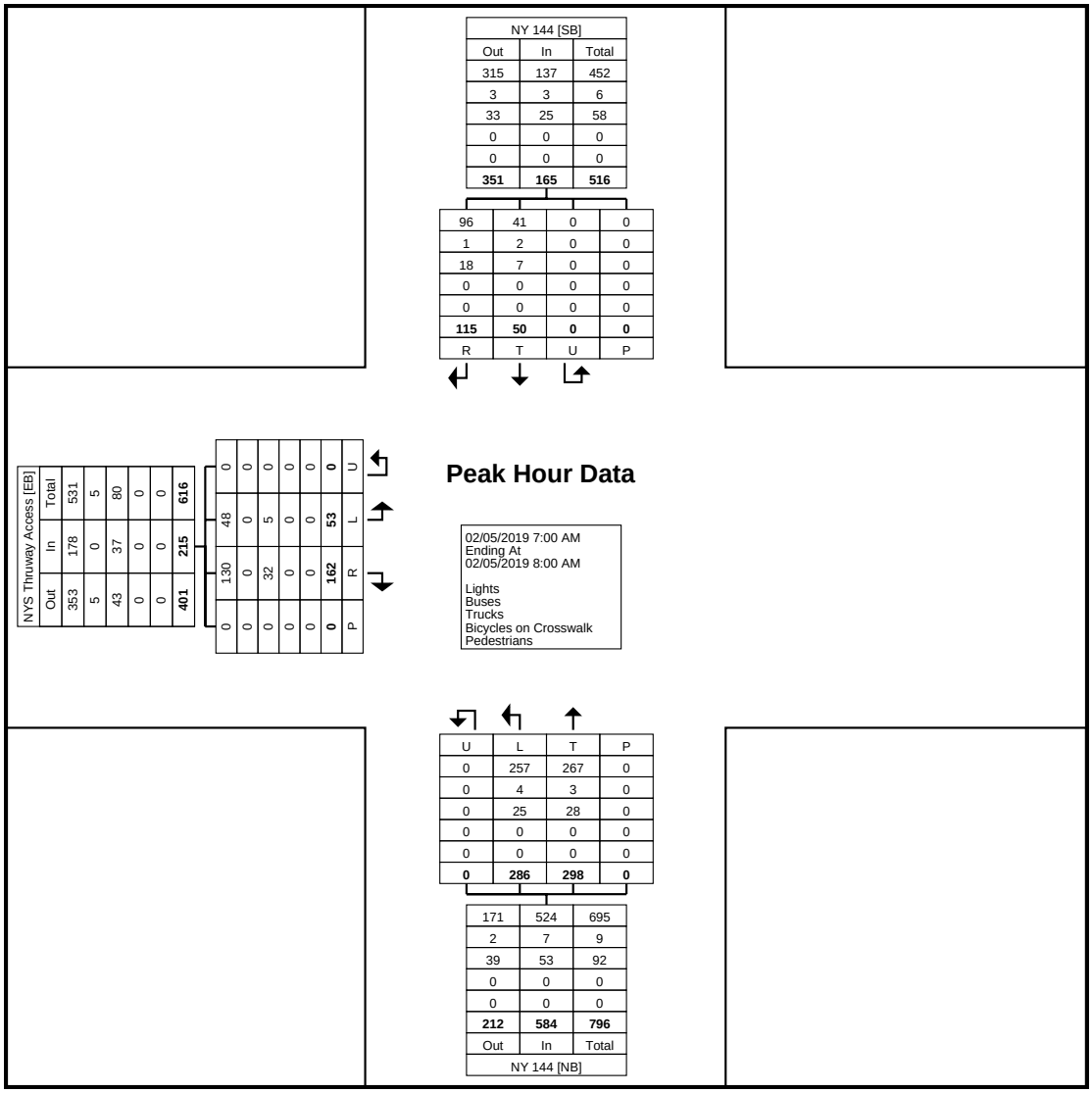
Count Name: NY 144 / New York State Thruway
Site Code: Bethlehem, New York
Start Date: 02/05/2019

Turning Movement Peak Hour Data (7:00 AM)

Start Time	NYS Thruway Access Eastbound					NY 144 Northbound					NY 144 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	11	49	0	0	60	87	64	0	0	151	11	20	0	0	31	242
7:15 AM	10	45	0	0	55	74	86	0	0	160	14	29	0	0	43	258
7:30 AM	16	36	0	0	52	68	92	0	0	160	11	33	0	0	44	256
7:45 AM	16	32	0	0	48	57	56	0	0	113	14	33	0	0	47	208
Total	53	162	0	0	215	286	298	0	0	584	50	115	0	0	165	964
Approach %	24.7	75.3	0.0	-	-	49.0	51.0	0.0	-	-	30.3	69.7	0.0	-	-	-
Total %	5.5	16.8	0.0	-	22.3	29.7	30.9	0.0	-	60.6	5.2	11.9	0.0	-	17.1	-
PHF	0.828	0.827	0.000	-	0.896	0.822	0.810	0.000	-	0.913	0.893	0.871	0.000	-	0.878	0.934
Lights	48	130	0	-	178	257	267	0	-	524	41	96	0	-	137	839
% Lights	90.6	80.2	-	-	82.8	89.9	89.6	-	-	89.7	82.0	83.5	-	-	83.0	87.0
Buses	0	0	0	-	0	4	3	0	-	7	2	1	0	-	3	10
% Buses	0.0	0.0	-	-	0.0	1.4	1.0	-	-	1.2	4.0	0.9	-	-	1.8	1.0
Trucks	5	32	0	-	37	25	28	0	-	53	7	18	0	-	25	115
% Trucks	9.4	19.8	-	-	17.2	8.7	9.4	-	-	9.1	14.0	15.7	-	-	15.2	11.9
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Turning Movement Peak Hour Data Plot (7:00 AM)

Albany, NY
NY 144 / NY State Thruway Access
Tuesday, February 5, 2019
Location: 42.534276, -73.778231

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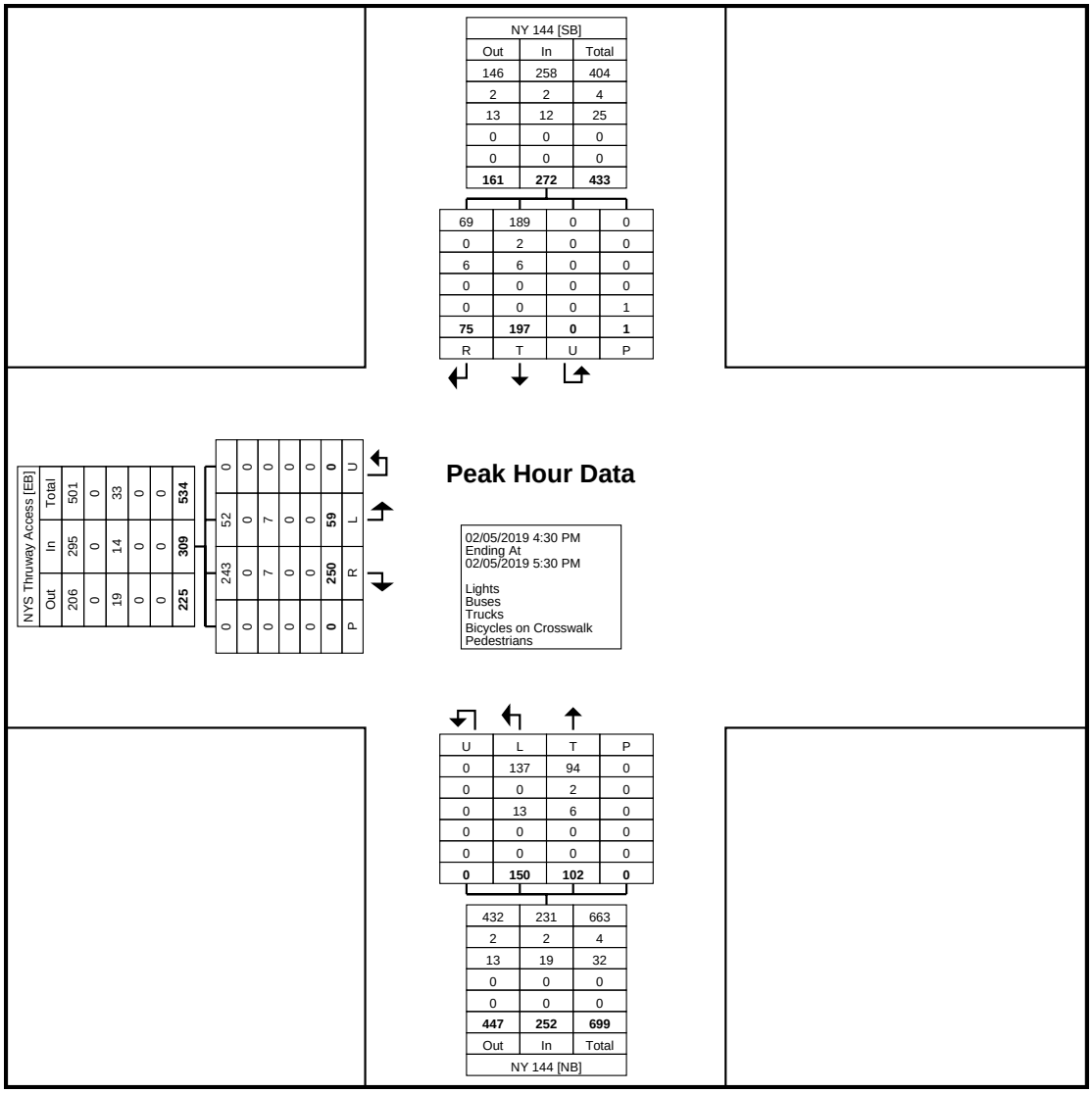
Count Name: NY 144 / New York State Thruway
Site Code: Bethlehem, New York
Start Date: 02/05/2019

Turning Movement Peak Hour Data (4:30 PM)

Start Time	NYS Thruway Access Eastbound					NY 144 Northbound					NY 144 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
4:30 PM	12	61	0	0	73	58	27	0	0	85	57	23	0	1	80	238
4:45 PM	17	58	0	0	75	26	29	0	0	55	35	14	0	0	49	179
5:00 PM	12	55	0	0	67	37	21	0	0	58	46	18	0	0	64	189
5:15 PM	18	76	0	0	94	29	25	0	0	54	59	20	0	0	79	227
Total	59	250	0	0	309	150	102	0	0	252	197	75	0	1	272	833
Approach %	19.1	80.9	0.0	-	-	59.5	40.5	0.0	-	-	72.4	27.6	0.0	-	-	-
Total %	7.1	30.0	0.0	-	37.1	18.0	12.2	0.0	-	30.3	23.6	9.0	0.0	-	32.7	-
PHF	0.819	0.822	0.000	-	0.822	0.647	0.879	0.000	-	0.741	0.835	0.815	0.000	-	0.850	0.875
Lights	52	243	0	-	295	137	94	0	-	231	189	69	0	-	258	784
% Lights	88.1	97.2	-	-	95.5	91.3	92.2	-	-	91.7	95.9	92.0	-	-	94.9	94.1
Buses	0	0	0	-	0	0	2	0	-	2	2	0	0	-	2	4
% Buses	0.0	0.0	-	-	0.0	0.0	2.0	-	-	0.8	1.0	0.0	-	-	0.7	0.5
Trucks	7	7	0	-	14	13	6	0	-	19	6	6	0	-	12	45
% Trucks	11.9	2.8	-	-	4.5	8.7	5.9	-	-	7.5	3.0	8.0	-	-	4.4	5.4
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

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Turning Movement Peak Hour Data Plot (4:30 PM)

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Port of Albany, NY
NY 144/Clapper Road
Tuesday, February 26,2019
Location: 42.552503, -73.769465

Count Name: NY 144/Clapper Rd
Site Code: Bethlehem, New York
Start Date: 02/26/2019

Turning Movement Data

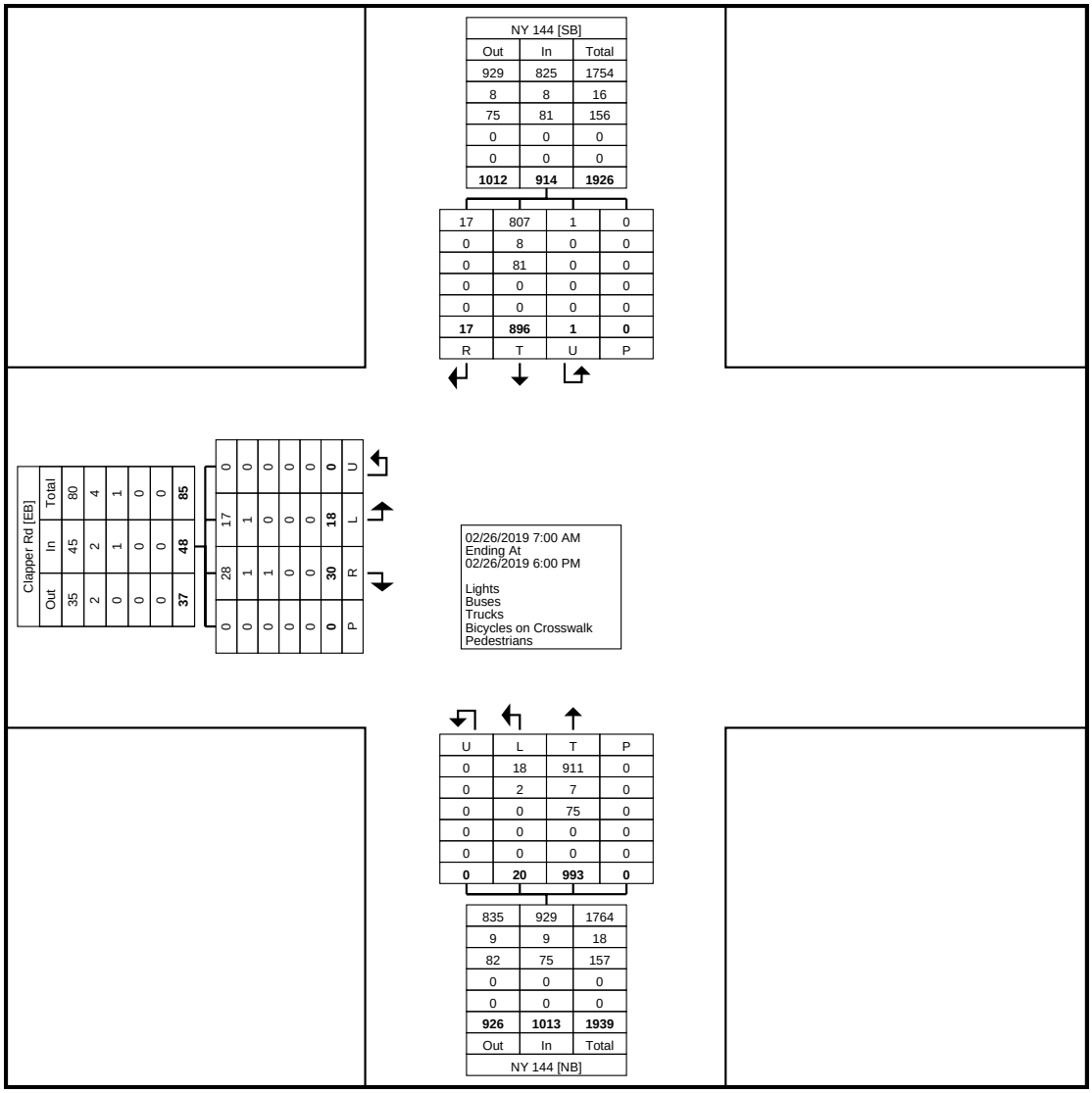
Start Time	Clapper Rd Eastbound					NY 144 Northbound					NY 144 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	1	1	0	0	2	0	88	0	0	88	29	1	0	0	30	120
7:15 AM	1	4	0	0	5	1	98	0	0	99	31	0	0	0	31	135
7:30 AM	1	3	0	0	4	0	148	0	0	148	38	0	0	0	38	190
7:45 AM	3	4	0	0	7	1	94	0	0	95	36	0	0	0	36	138
Hourly Total	6	12	0	0	18	2	428	0	0	430	134	1	0	0	135	583
8:00 AM	0	2	0	0	2	1	84	0	0	85	37	1	0	0	38	125
8:15 AM	1	2	0	0	3	2	86	0	0	88	32	0	0	0	32	123
8:30 AM	2	5	0	0	7	3	70	0	0	73	23	1	0	0	24	104
8:45 AM	2	1	0	0	3	1	45	0	0	46	22	1	0	0	23	72
Hourly Total	5	10	0	0	15	7	285	0	0	292	114	3	0	0	117	424
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	1	1	0	0	2	1	47	0	0	48	65	4	1	0	70	120
4:15 PM	0	1	0	0	1	2	21	0	0	23	96	1	0	0	97	121
4:30 PM	2	1	0	0	3	0	50	0	0	50	90	1	0	0	91	144
4:45 PM	0	0	0	0	0	0	46	0	0	46	90	2	0	0	92	138
Hourly Total	3	3	0	0	6	3	164	0	0	167	341	8	1	0	350	523
5:00 PM	1	0	0	0	1	4	32	0	0	36	81	2	0	0	83	120
5:15 PM	1	1	0	0	2	1	31	0	0	32	104	0	0	0	104	138
5:30 PM	0	1	0	0	1	1	29	0	0	30	68	3	0	0	71	102
5:45 PM	2	3	0	0	5	2	24	0	0	26	54	0	0	0	54	85
Hourly Total	4	5	0	0	9	8	116	0	0	124	307	5	0	0	312	445
Grand Total	18	30	0	0	48	20	993	0	0	1013	896	17	1	0	914	1975
Approach %	37.5	62.5	0.0	-	-	2.0	98.0	0.0	-	-	98.0	1.9	0.1	-	-	-
Total %	0.9	1.5	0.0	-	2.4	1.0	50.3	0.0	-	51.3	45.4	0.9	0.1	-	46.3	-
Lights	17	28	0	-	45	18	911	0	-	929	807	17	1	-	825	1799
% Lights	94.4	93.3	-	-	93.8	90.0	91.7	-	-	91.7	90.1	100.0	100.0	-	90.3	91.1
Buses	1	1	0	-	2	2	7	0	-	9	8	0	0	-	8	19
% Buses	5.6	3.3	-	-	4.2	10.0	0.7	-	-	0.9	0.9	0.0	0.0	-	0.9	1.0
Trucks	0	1	0	-	1	0	75	0	-	75	81	0	0	-	81	157
% Trucks	0.0	3.3	-	-	2.1	0.0	7.6	-	-	7.4	9.0	0.0	0.0	-	8.9	7.9
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Port of Albany, NY
NY 144/Clapper Road
Tuesday, February 26,2019
Location: 42.552503, -73.769465

Count Name: NY 144/Clapper Rd
Site Code: Bethlehem, New York
Start Date: 02/26/2019



Turning Movement Data Plot

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Port of Albany, NY
NY 144/Clapper Road
Tuesday, February 26,2019
Location: 42.552503, -73.769465

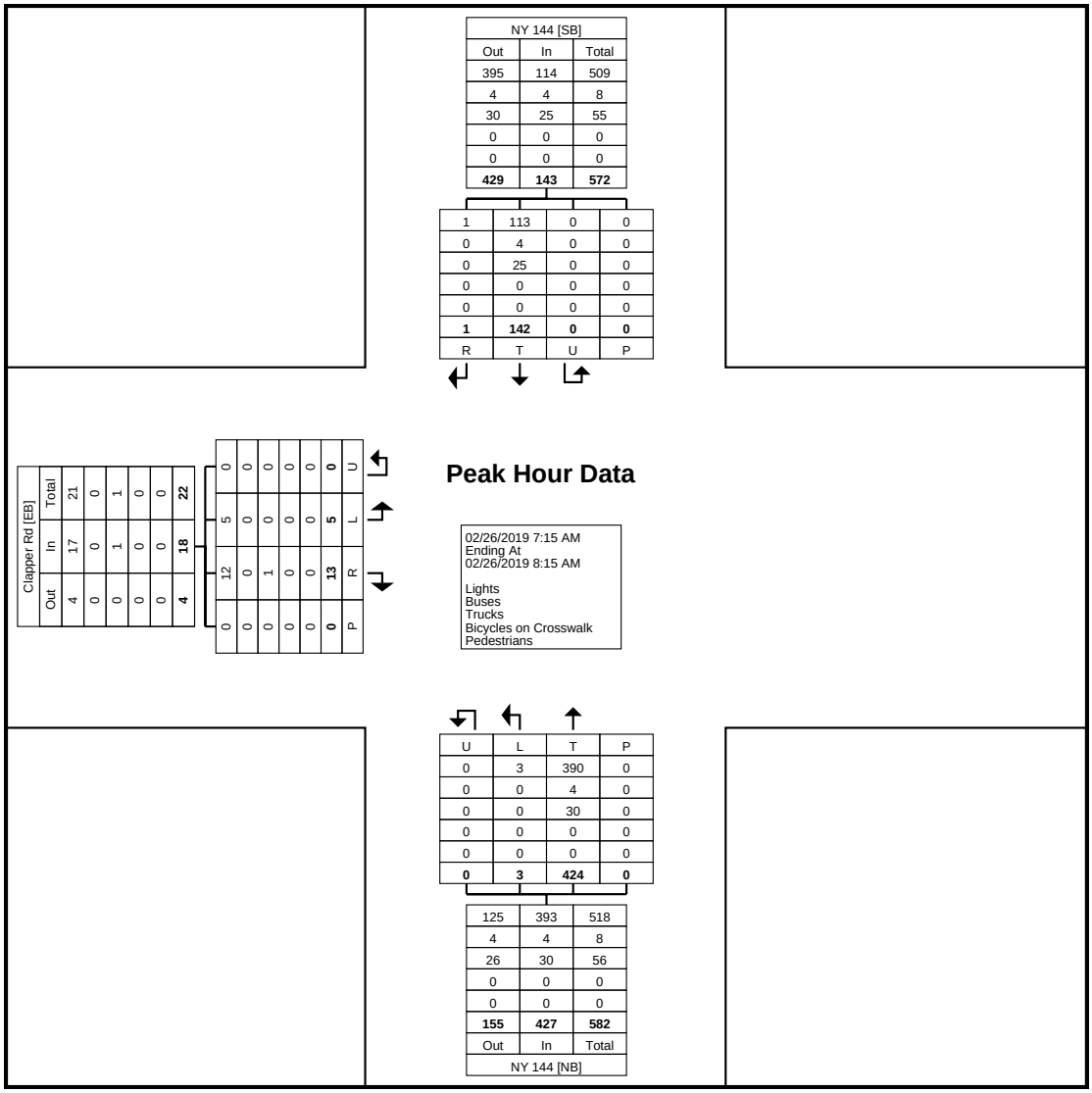
Count Name: NY 144/Clapper Rd
Site Code: Bethlehem, New York
Start Date: 02/26/2019

Turning Movement Peak Hour Data (7:15 AM)

Start Time	Clapper Rd Eastbound					NY 144 Northbound					NY 144 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:15 AM	1	4	0	0	5	1	98	0	0	99	31	0	0	0	31	135
7:30 AM	1	3	0	0	4	0	148	0	0	148	38	0	0	0	38	190
7:45 AM	3	4	0	0	7	1	94	0	0	95	36	0	0	0	36	138
8:00 AM	0	2	0	0	2	1	84	0	0	85	37	1	0	0	38	125
Total	5	13	0	0	18	3	424	0	0	427	142	1	0	0	143	588
Approach %	27.8	72.2	0.0	-	-	0.7	99.3	0.0	-	-	99.3	0.7	0.0	-	-	-
Total %	0.9	2.2	0.0	-	3.1	0.5	72.1	0.0	-	72.6	24.1	0.2	0.0	-	24.3	-
PHF	0.417	0.813	0.000	-	0.643	0.750	0.716	0.000	-	0.721	0.934	0.250	0.000	-	0.941	0.774
Lights	5	12	0	-	17	3	390	0	-	393	113	1	0	-	114	524
% Lights	100.0	92.3	-	-	94.4	100.0	92.0	-	-	92.0	79.6	100.0	-	-	79.7	89.1
Buses	0	0	0	-	0	0	4	0	-	4	4	0	0	-	4	8
% Buses	0.0	0.0	-	-	0.0	0.0	0.9	-	-	0.9	2.8	0.0	-	-	2.8	1.4
Trucks	0	1	0	-	1	0	30	0	-	30	25	0	0	-	25	56
% Trucks	0.0	7.7	-	-	5.6	0.0	7.1	-	-	7.0	17.6	0.0	-	-	17.5	9.5
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Port of Albany, NY
NY 144/Clapper Road
Tuesday, February 26,2019
Location: 42.552503, -73.769465

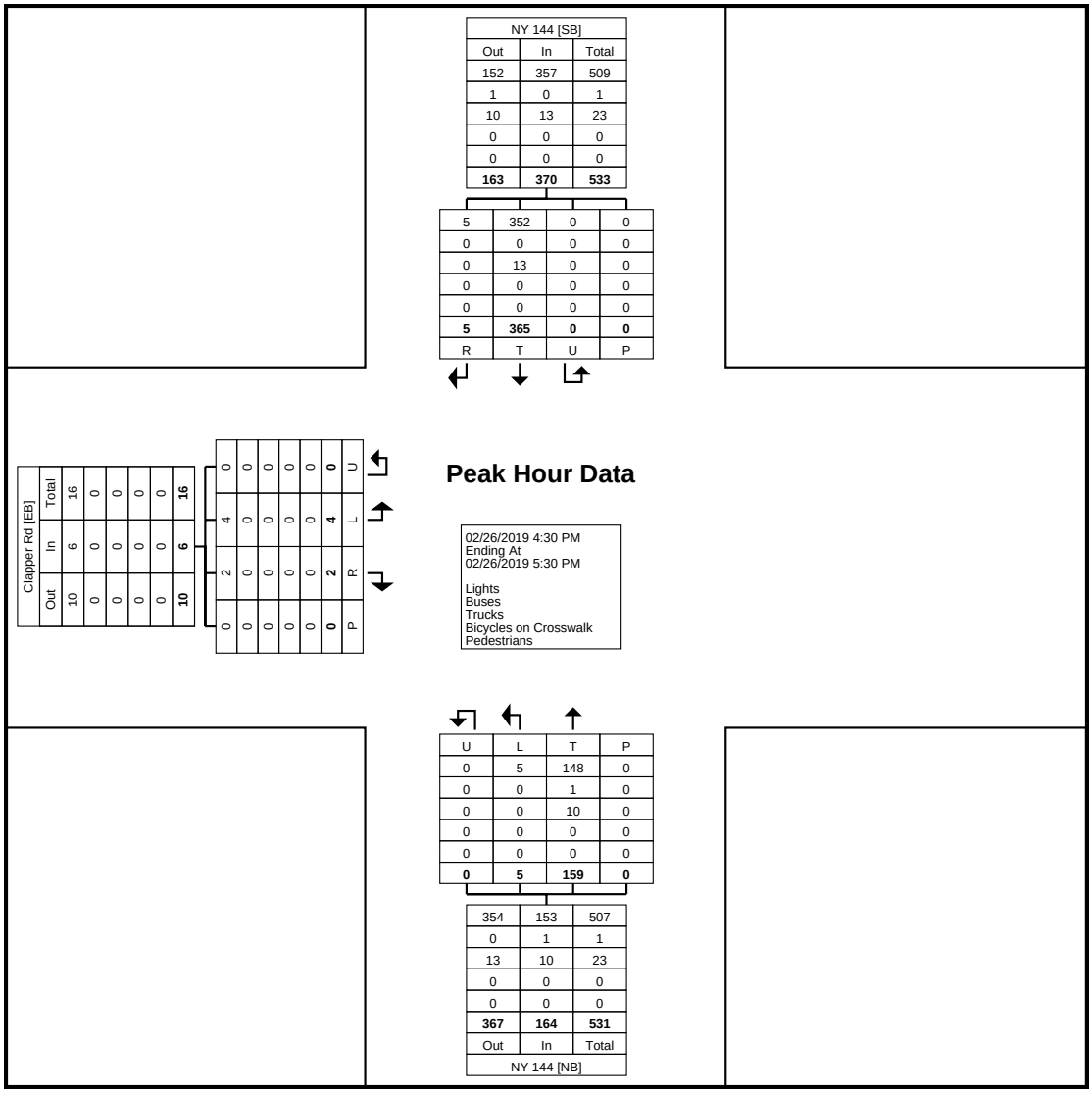
Count Name: NY 144/Clapper Rd
Site Code: Bethlehem, New York
Start Date: 02/26/2019

Turning Movement Peak Hour Data (4:30 PM)

Start Time	Clapper Rd Eastbound					NY 144 Northbound					NY 144 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
4:30 PM	2	1	0	0	3	0	50	0	0	50	90	1	0	0	91	144
4:45 PM	0	0	0	0	0	0	46	0	0	46	90	2	0	0	92	138
5:00 PM	1	0	0	0	1	4	32	0	0	36	81	2	0	0	83	120
5:15 PM	1	1	0	0	2	1	31	0	0	32	104	0	0	0	104	138
Total	4	2	0	0	6	5	159	0	0	164	365	5	0	0	370	540
Approach %	66.7	33.3	0.0	-	-	3.0	97.0	0.0	-	-	98.6	1.4	0.0	-	-	-
Total %	0.7	0.4	0.0	-	1.1	0.9	29.4	0.0	-	30.4	67.6	0.9	0.0	-	68.5	-
PHF	0.500	0.500	0.000	-	0.500	0.313	0.795	0.000	-	0.820	0.877	0.625	0.000	-	0.889	0.938
Lights	4	2	0	-	6	5	148	0	-	153	352	5	0	-	357	516
% Lights	100.0	100.0	-	-	100.0	100.0	93.1	-	-	93.3	96.4	100.0	-	-	96.5	95.6
Buses	0	0	0	-	0	0	1	0	-	1	0	0	0	-	0	1
% Buses	0.0	0.0	-	-	0.0	0.0	0.6	-	-	0.6	0.0	0.0	-	-	0.0	0.2
Trucks	0	0	0	-	0	0	10	0	-	10	13	0	0	-	13	23
% Trucks	0.0	0.0	-	-	0.0	0.0	6.3	-	-	6.1	3.6	0.0	-	-	3.5	4.3
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Turning Movement Peak Hour Data Plot (4:30 PM)

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Albany, NY
US 9W/NY 32
Wednesday, February 6. 2019
Location: 42.620891, -73.778155

Count Name: US 9W / NY 32
Site Code: Glenmont, New York
Start Date: 02/06/2019

Turning Movement Data

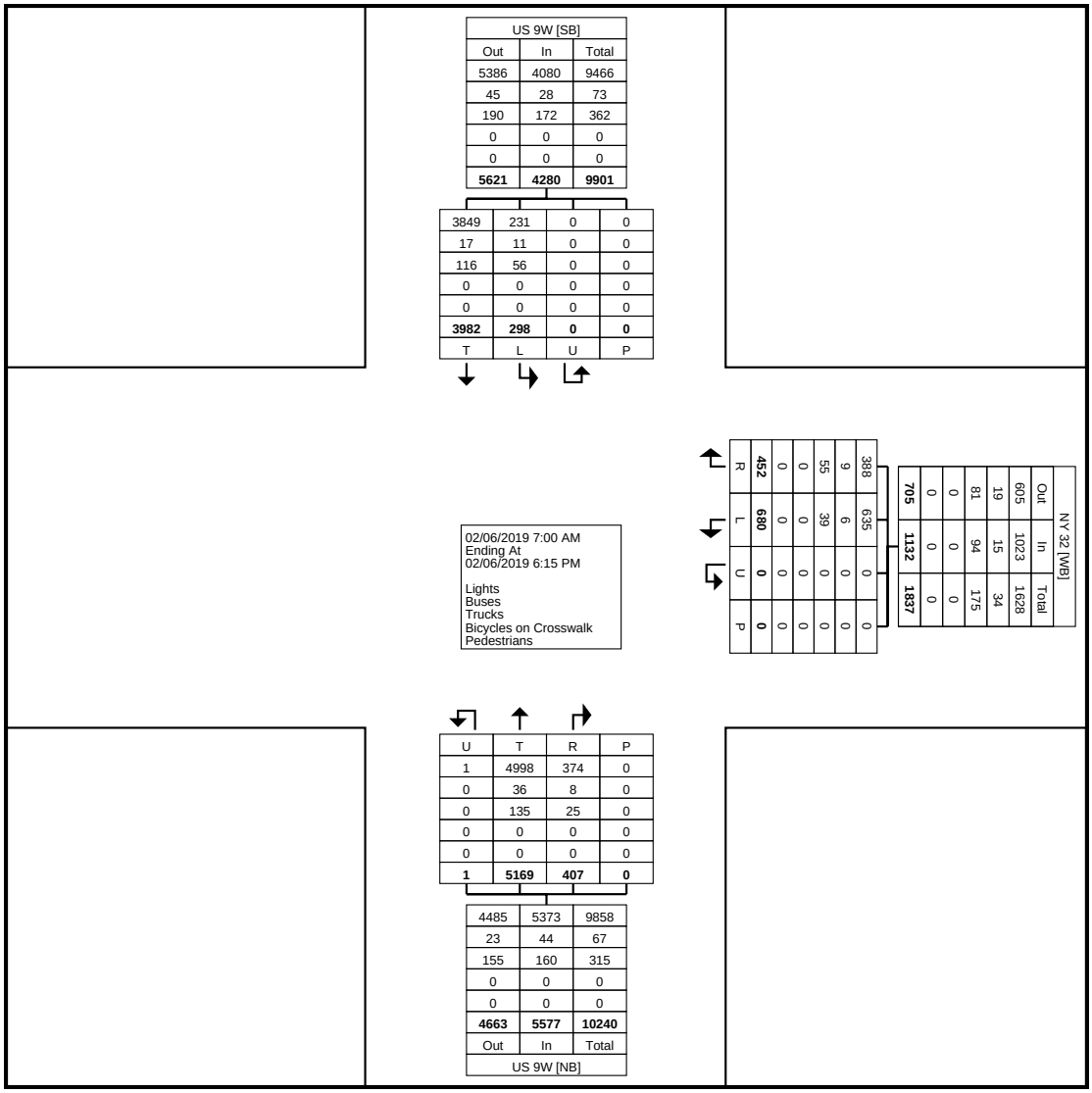
Start Time	NY 32 Westbound					US 9W Northbound					US 9W Southbound					
	Left	Right	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Int. Total
7:00 AM	19	37	0	0	56	320	33	0	0	353	16	162	0	0	178	587
7:15 AM	16	39	0	0	55	455	31	0	0	486	15	160	0	0	175	716
7:30 AM	22	30	0	0	52	485	35	0	0	520	19	159	0	0	178	750
7:45 AM	23	41	0	0	64	492	41	0	0	533	18	183	0	0	201	798
Hourly Total	80	147	0	0	227	1752	140	0	0	1892	68	664	0	0	732	2851
8:00 AM	17	32	0	0	49	394	50	0	0	444	25	182	0	0	207	700
8:15 AM	22	35	0	0	57	459	22	0	0	481	29	214	0	0	243	781
8:30 AM	8	38	0	0	46	419	28	0	0	447	17	134	0	0	151	644
8:45 AM	27	21	0	0	48	315	22	0	0	337	16	166	0	0	182	567
Hourly Total	74	126	0	0	200	1587	122	0	0	1709	87	696	0	0	783	2692
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	56	36	0	0	92	234	14	0	0	248	16	292	0	0	308	648
4:15 PM	56	25	0	0	81	230	18	0	0	248	19	346	0	0	365	694
4:30 PM	63	17	0	0	80	272	19	0	0	291	19	312	0	0	331	702
4:45 PM	77	20	0	0	97	249	26	1	0	276	15	305	0	0	320	693
Hourly Total	252	98	0	0	350	985	77	1	0	1063	69	1255	0	0	1324	2737
5:00 PM	66	28	0	0	94	221	20	0	0	241	26	331	0	0	357	692
5:15 PM	86	21	0	0	107	248	19	0	0	267	16	298	0	0	314	688
5:30 PM	71	17	0	0	88	198	16	0	0	214	23	335	0	0	358	660
5:45 PM	51	15	0	0	66	178	13	0	0	191	9	402	0	0	411	668
Hourly Total	274	81	0	0	355	845	68	0	0	913	74	1366	0	0	1440	2708
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Grand Total	680	452	0	0	1132	5169	407	1	0	5577	298	3982	0	0	4280	10989
Approach %	60.1	39.9	0.0	-	-	92.7	7.3	0.0	-	-	7.0	93.0	0.0	-	-	-
Total %	6.2	4.1	0.0	-	10.3	47.0	3.7	0.0	-	50.8	2.7	36.2	0.0	-	38.9	-
Lights	635	388	0	-	1023	4998	374	1	-	5373	231	3849	0	-	4080	10476
% Lights	93.4	85.8	-	-	90.4	96.7	91.9	100.0	-	96.3	77.5	96.7	-	-	95.3	95.3
Buses	6	9	0	-	15	36	8	0	-	44	11	17	0	-	28	87
% Buses	0.9	2.0	-	-	1.3	0.7	2.0	0.0	-	0.8	3.7	0.4	-	-	0.7	0.8
Trucks	39	55	0	-	94	135	25	0	-	160	56	116	0	-	172	426
% Trucks	5.7	12.2	-	-	8.3	2.6	6.1	0.0	-	2.9	18.8	2.9	-	-	4.0	3.9
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Albany, NY
US 9W/NY 32
Wednesday, February 6. 2019
Location: 42.620891, -73.778155

Count Name: US 9W / NY 32
Site Code: Glenmont, New York
Start Date: 02/06/2019



Turning Movement Data Plot

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Albany, NY
US 9W/NY 32
Wednesday, February 6. 2019
Location: 42.620891, -73.778155

Count Name: US 9W / NY 32
Site Code: Glenmont, New York
Start Date: 02/06/2019

Turning Movement Peak Hour Data (7:30 AM)

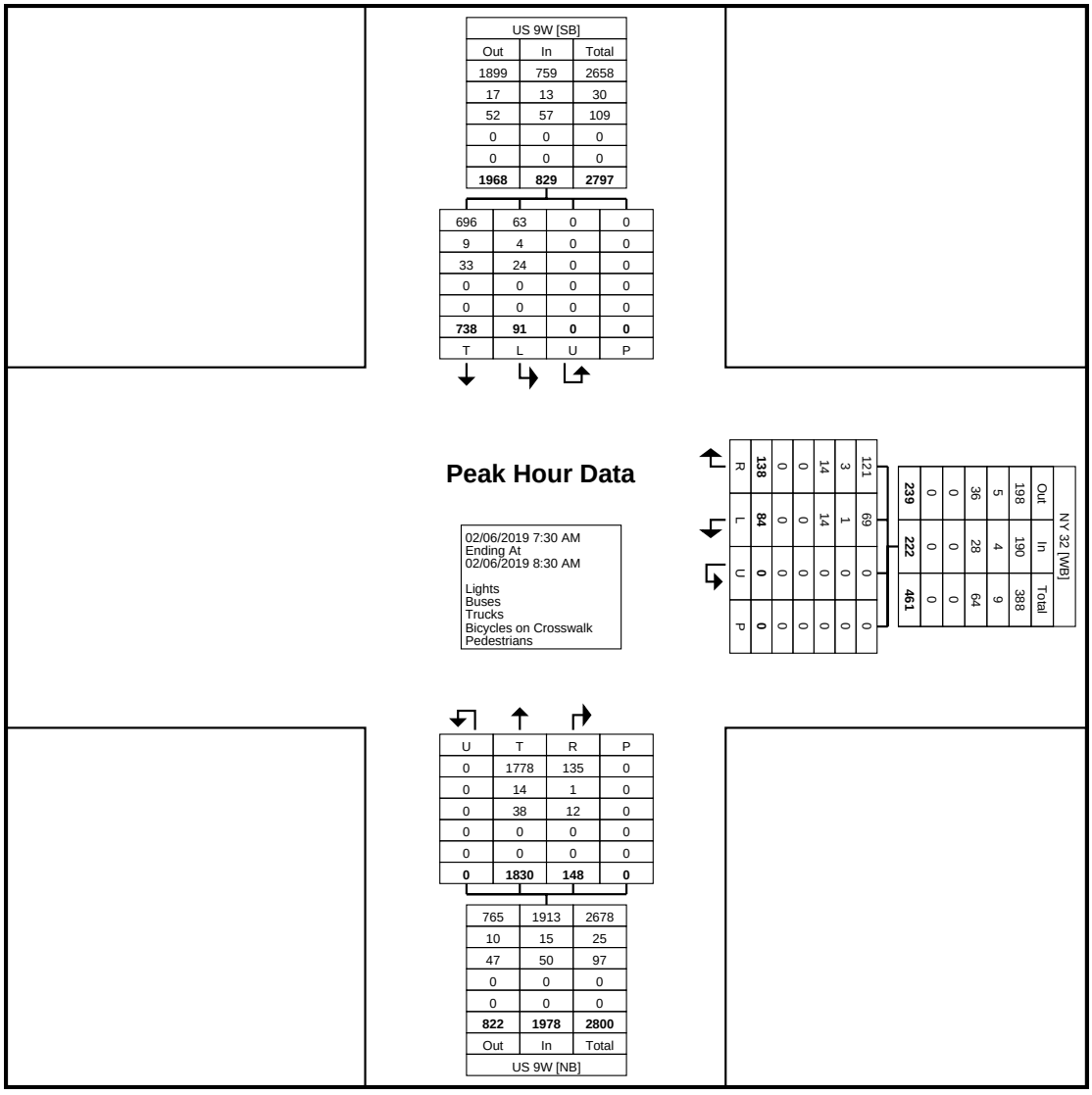
Start Time	NY 32 Westbound					US 9W Northbound					US 9W Southbound					
	Left	Right	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Int. Total
7:30 AM	22	30	0	0	52	485	35	0	0	520	19	159	0	0	178	750
7:45 AM	23	41	0	0	64	492	41	0	0	533	18	183	0	0	201	798
8:00 AM	17	32	0	0	49	394	50	0	0	444	25	182	0	0	207	700
8:15 AM	22	35	0	0	57	459	22	0	0	481	29	214	0	0	243	781
Total	84	138	0	0	222	1830	148	0	0	1978	91	738	0	0	829	3029
Approach %	37.8	62.2	0.0	-	-	92.5	7.5	0.0	-	-	11.0	89.0	0.0	-	-	-
Total %	2.8	4.6	0.0	-	7.3	60.4	4.9	0.0	-	65.3	3.0	24.4	0.0	-	27.4	-
PHF	0.913	0.841	0.000	-	0.867	0.930	0.740	0.000	-	0.928	0.784	0.862	0.000	-	0.853	0.949
Lights	69	121	0	-	190	1778	135	0	-	1913	63	696	0	-	759	2862
% Lights	82.1	87.7	-	-	85.6	97.2	91.2	-	-	96.7	69.2	94.3	-	-	91.6	94.5
Buses	1	3	0	-	4	14	1	0	-	15	4	9	0	-	13	32
% Buses	1.2	2.2	-	-	1.8	0.8	0.7	-	-	0.8	4.4	1.2	-	-	1.6	1.1
Trucks	14	14	0	-	28	38	12	0	-	50	24	33	0	-	57	135
% Trucks	16.7	10.1	-	-	12.6	2.1	8.1	-	-	2.5	26.4	4.5	-	-	6.9	4.5
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Albany, NY
US 9W/NY 32
Wednesday, February 6. 2019
Location: 42.620891, -73.778155

Count Name: US 9W / NY 32
Site Code: Glenmont, New York
Start Date: 02/06/2019



Turning Movement Peak Hour Data Plot (7:30 AM)

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Albany, NY
US 9W/NY 32
Wednesday, February 6. 2019
Location: 42.620891, -73.778155

Count Name: US 9W / NY 32
Site Code: Glenmont, New York
Start Date: 02/06/2019

Turning Movement Peak Hour Data (4:15 PM)

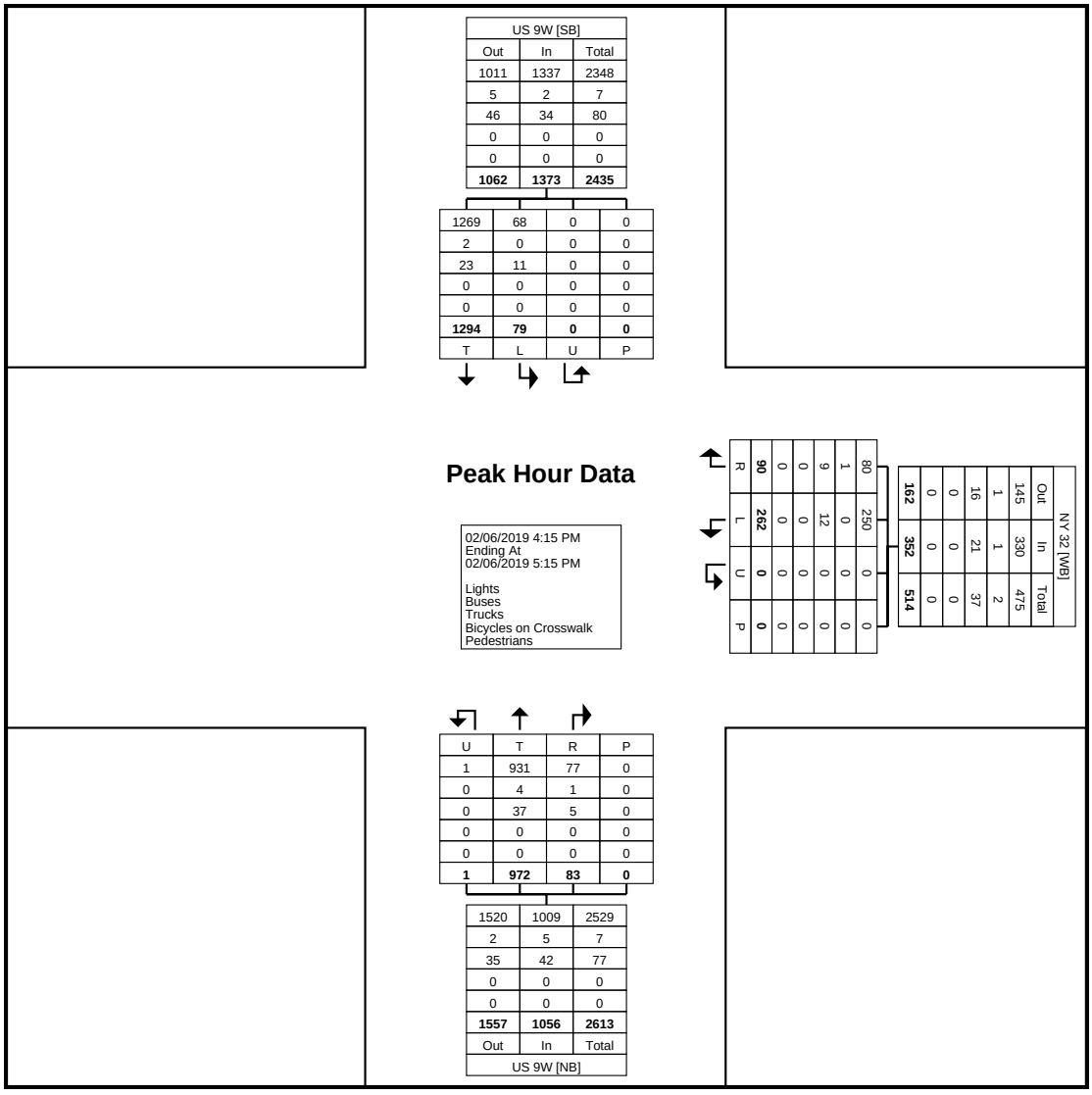
Start Time	NY 32 Westbound					US 9W Northbound					US 9W Southbound					
	Left	Right	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Int. Total
4:15 PM	56	25	0	0	81	230	18	0	0	248	19	346	0	0	365	694
4:30 PM	63	17	0	0	80	272	19	0	0	291	19	312	0	0	331	702
4:45 PM	77	20	0	0	97	249	26	1	0	276	15	305	0	0	320	693
5:00 PM	66	28	0	0	94	221	20	0	0	241	26	331	0	0	357	692
Total	262	90	0	0	352	972	83	1	0	1056	79	1294	0	0	1373	2781
Approach %	74.4	25.6	0.0	-	-	92.0	7.9	0.1	-	-	5.8	94.2	0.0	-	-	-
Total %	9.4	3.2	0.0	-	12.7	35.0	3.0	0.0	-	38.0	2.8	46.5	0.0	-	49.4	-
PHF	0.851	0.804	0.000	-	0.907	0.893	0.798	0.250	-	0.907	0.760	0.935	0.000	-	0.940	0.990
Lights	250	80	0	-	330	931	77	1	-	1009	68	1269	0	-	1337	2676
% Lights	95.4	88.9	-	-	93.8	95.8	92.8	100.0	-	95.5	86.1	98.1	-	-	97.4	96.2
Buses	0	1	0	-	1	4	1	0	-	5	0	2	0	-	2	8
% Buses	0.0	1.1	-	-	0.3	0.4	1.2	0.0	-	0.5	0.0	0.2	-	-	0.1	0.3
Trucks	12	9	0	-	21	37	5	0	-	42	11	23	0	-	34	97
% Trucks	4.6	10.0	-	-	6.0	3.8	6.0	0.0	-	4.0	13.9	1.8	-	-	2.5	3.5
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Albany, NY
US 9W/NY 32
Wednesday, February 6. 2019
Location: 42.620891, -73.778155

Count Name: US 9W / NY 32
Site Code: Glenmont, New York
Start Date: 02/06/2019



Turning Movement Peak Hour Data Plot (4:15 PM)

TRI-STATE TRAFFIC DATA
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Port of Albany, NY
US 9W/Glenmont Road
Tuesday, February 26, 2019
Location: 42.601883, -73.791855

Count Name: US 9W/Glenmont Rd
Site Code: Albany, New York
Start Date: 02/26/2019

Turning Movement Data

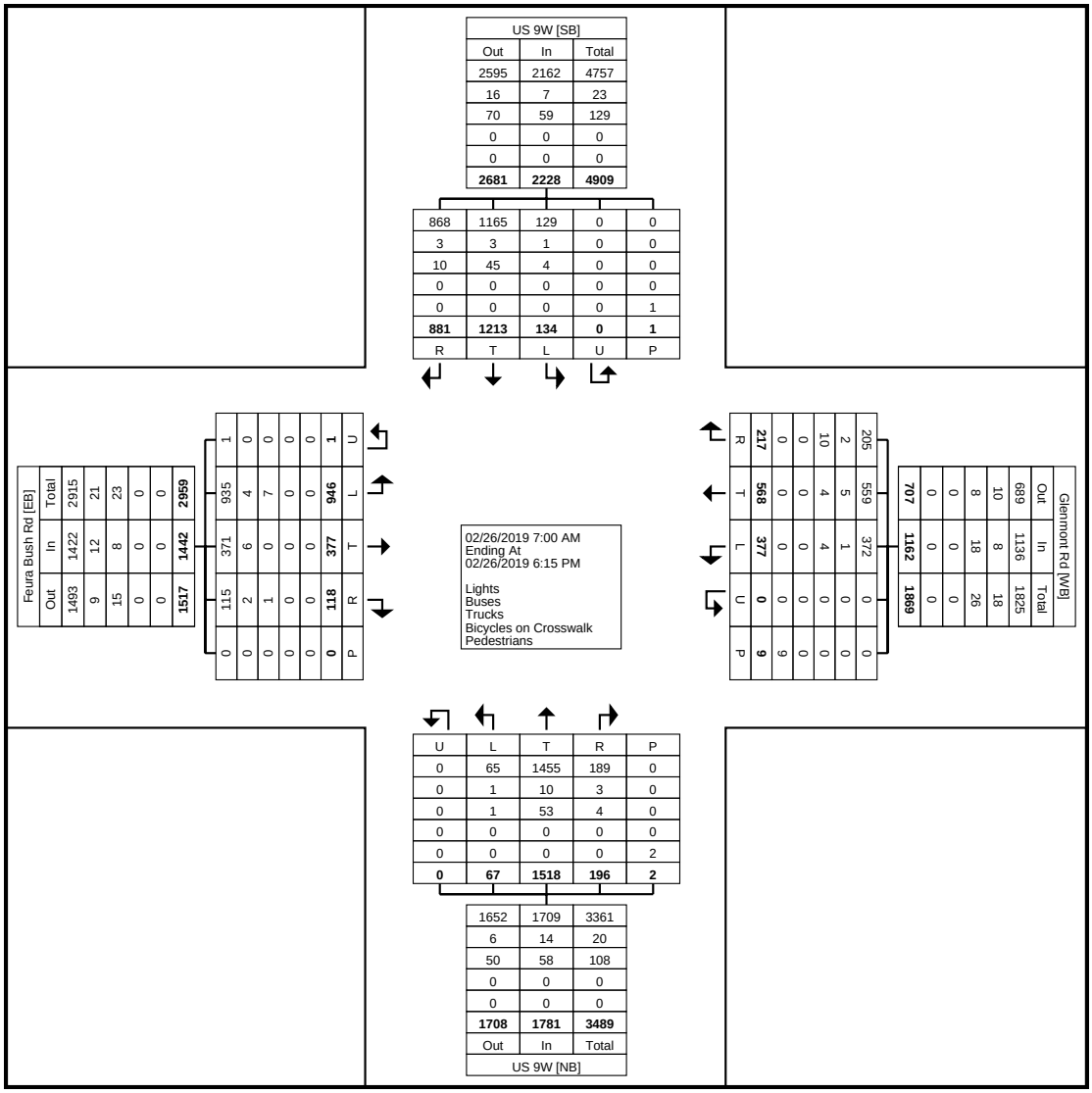
Start Time	Feura Bush Rd Eastbound							Glenmont Rd Westbound							US 9W Northbound							US 9W Southbound							Int. Total
	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	
7:00 AM	51	16	3	0	0	0	70	10	20	4	4	0	0	38	4	110	9	0	0	0	123	1	54	10	4	0	0	69	300
7:15 AM	82	13	8	1	0	0	104	5	19	5	6	0	0	35	4	123	10	4	0	0	141	3	56	14	1	0	0	74	354
7:30 AM	69	29	6	0	0	0	104	7	15	9	4	0	1	35	5	133	9	0	0	0	147	1	51	16	3	0	0	71	357
7:45 AM	75	35	6	2	0	0	118	9	13	7	11	0	0	40	3	120	13	3	0	0	139	5	43	15	8	0	0	71	368
Hourly Total	277	93	23	3	0	0	396	31	67	25	25	0	1	148	16	486	41	7	0	0	550	10	204	55	16	0	0	285	1379
8:00 AM	72	27	5	2	0	0	106	8	17	6	8	0	2	39	3	130	11	1	0	1	145	9	50	22	5	0	0	86	376
8:15 AM	77	21	6	1	0	0	105	13	16	7	6	0	0	42	5	116	18	2	0	0	141	10	56	25	13	0	0	104	392
8:30 AM	59	23	7	1	0	0	90	9	9	8	6	0	0	32	2	107	18	0	0	1	127	3	41	19	9	0	1	72	321
8:45 AM	64	17	10	0	0	0	91	14	22	19	2	0	0	57	4	110	13	1	0	0	128	8	40	16	11	0	0	75	351
Hourly Total	272	88	28	4	0	0	392	44	64	40	22	0	2	170	14	463	60	4	0	2	541	30	187	82	38	0	1	337	1440
9:00 AM	1	0	0	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	1	0	0	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
4:00 PM	44	28	5	4	0	0	81	29	48	12	0	0	2	89	2	87	11	0	0	0	100	8	98	52	27	0	0	185	455
4:15 PM	47	29	7	1	0	0	84	31	53	10	4	0	3	98	6	69	6	1	0	0	82	18	116	28	35	0	0	197	461
4:30 PM	48	15	1	3	0	0	67	47	51	8	3	0	0	109	2	55	11	2	0	0	70	13	101	52	24	0	0	190	436
4:45 PM	50	32	10	0	0	0	92	35	55	8	1	0	1	99	10	81	6	1	0	0	98	14	99	58	22	0	0	193	482
Hourly Total	189	104	23	8	0	0	324	142	207	38	8	0	6	395	20	292	34	4	0	0	350	53	414	190	108	0	0	765	1834
5:00 PM	43	23	3	6	1	0	76	48	58	15	3	0	0	124	3	69	12	0	0	0	84	12	106	74	17	0	0	209	493
5:15 PM	44	30	3	1	0	0	78	40	61	14	1	0	0	116	5	61	16	2	0	0	84	10	116	70	30	0	0	226	504
5:30 PM	63	23	1	5	0	0	92	43	51	12	4	0	0	110	4	76	10	1	0	0	91	9	90	56	41	0	0	196	489
5:45 PM	57	16	4	6	0	0	83	28	60	8	2	0	0	98	5	71	4	1	0	0	81	10	96	81	23	0	0	210	472
Hourly Total	207	92	11	18	1	0	329	159	230	49	10	0	0	448	17	277	42	4	0	0	340	41	408	281	111	0	0	841	1958
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	946	377	85	33	1	0	1442	377	568	152	65	0	9	1162	67	1518	177	19	0	2	1781	134	1213	608	273	0	1	2228	6613
Approach %	65.6	26.1	5.9	2.3	0.1	-	-	32.4	48.9	13.1	5.6	0.0	-	-	3.8	85.2	9.9	1.1	0.0	-	-	6.0	54.4	27.3	12.3	0.0	-	-	-
Total %	14.3	5.7	1.3	0.5	0.0	-	21.8	5.7	8.6	2.3	1.0	0.0	-	17.6	1.0	23.0	2.7	0.3	0.0	-	26.9	2.0	18.3	9.2	4.1	0.0	-	33.7	-
Lights	935	371	82	33	1	-	1422	372	559	143	62	0	-	1136	65	1455	171	18	0	-	1709	129	1165	600	268	0	-	2162	6429
% Lights	98.8	98.4	96.5	100.0	100.0	-	98.6	98.7	98.4	94.1	95.4	-	-	97.8	97.0	95.8	96.6	94.7	-	-	96.0	96.3	96.0	98.7	98.2	-	-	97.0	97.2
Buses	4	6	2	0	0	-	12	1	5	2	0	0	-	8	1	10	3	0	0	-	14	1	3	3	0	0	-	7	41
% Buses	0.4	1.6	2.4	0.0	0.0	-	0.8	0.3	0.9	1.3	0.0	-	-	0.7	1.5	0.7	1.7	0.0	-	-	0.8	0.7	0.2	0.5	0.0	-	-	0.3	0.6
Trucks	7	0	1	0	0	-	8	4	4	7	3	0	-	18	1	53	3	1	0	-	58	4	45	5	5	0	-	59	143
% Trucks	0.7	0.0	1.2	0.0	0.0	-	0.6	1.1	0.7	4.6	4.6	-	-	1.5	1.5	3.5	1.7	5.3	-	-	3.3	3.0	3.7	0.8	1.8	-	-	2.6	2.2
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	0.0	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	-	9	-	-	-	-	-	-	2	-	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	100.0	-	-	-	-	-	-	100.0	-	-

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Port of Albany, NY
US 9W/Glenmont Road
Tuesday, February 26, 2019
Location: 42.601883, -73.791855

Count Name: US 9W/Glenmont Rd
Site Code: Albany, New York
Start Date: 02/26/2019



Turning Movement Data Plot

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Port of Albany, NY
US 9W/Glenmont Road
Tuesday, February 26, 2019
Location: 42.601883, -73.791855

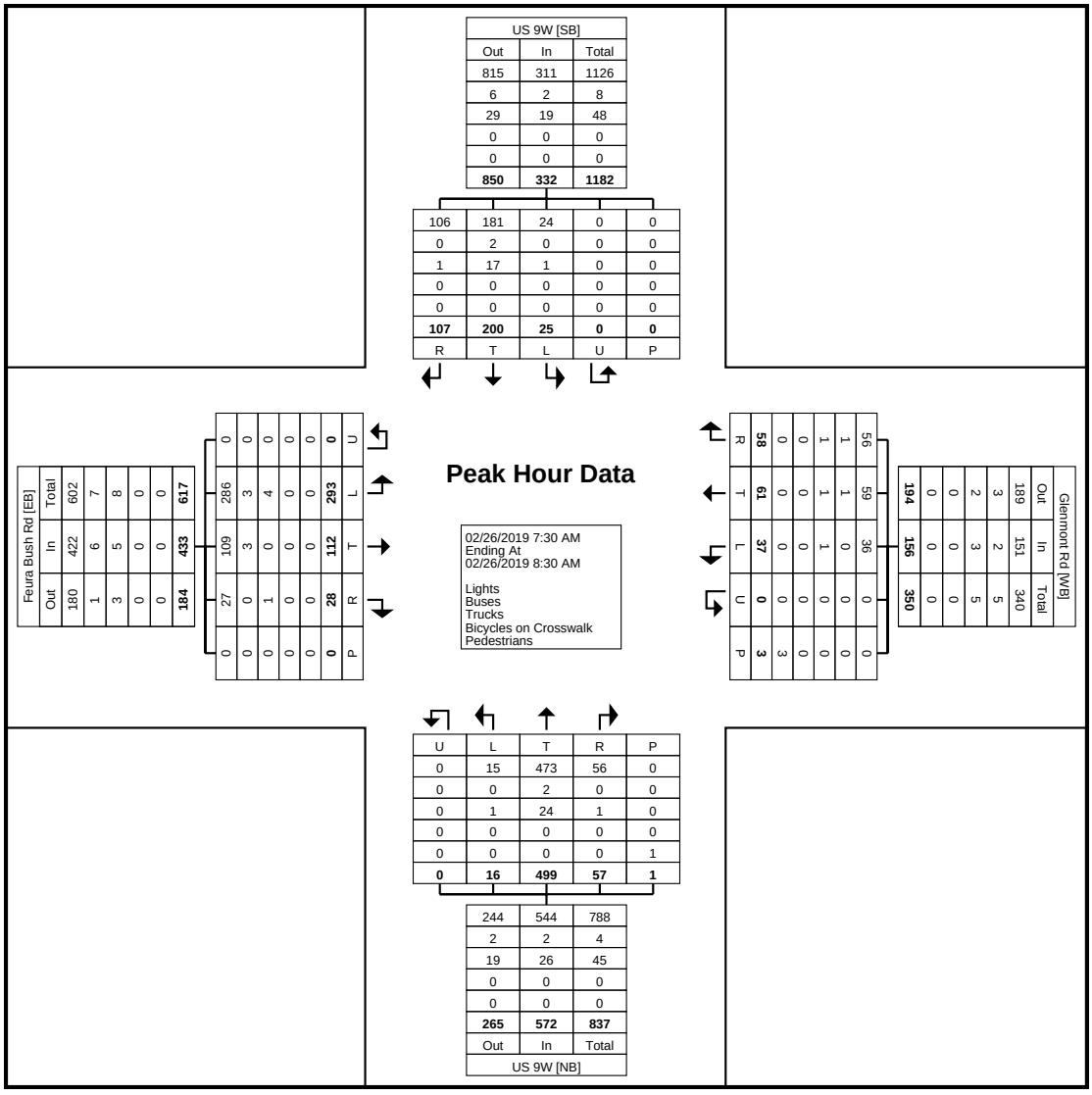
Count Name: US 9W/Glenmont Rd
Site Code: Albany, New York
Start Date: 02/26/2019

Turning Movement Peak Hour Data (7:30 AM)

Start Time	Feura Bush Rd Eastbound							Glenmont Rd Westbound							US 9W Northbound							US 9W Southbound							Int. Total
	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	
7:30 AM	69	29	6	0	0	0	104	7	15	9	4	0	1	35	5	133	9	0	0	0	147	1	51	16	3	0	0	71	357
7:45 AM	75	35	6	2	0	0	118	9	13	7	11	0	0	40	3	120	13	3	0	0	139	5	43	15	8	0	0	71	368
8:00 AM	72	27	5	2	0	0	106	8	17	6	8	0	2	39	3	130	11	1	0	1	145	9	50	22	5	0	0	86	376
8:15 AM	77	21	6	1	0	0	105	13	16	7	6	0	0	42	5	116	18	2	0	0	141	10	56	25	13	0	0	104	392
Total	293	112	23	5	0	0	433	37	61	29	29	0	3	156	16	499	51	6	0	1	572	25	200	78	29	0	0	332	1493
Approach %	67.7	25.9	5.3	1.2	0.0	-	-	23.7	39.1	18.6	18.6	0.0	-	-	2.8	87.2	8.9	1.0	0.0	-	-	7.5	60.2	23.5	8.7	0.0	-	-	-
Total %	19.6	7.5	1.5	0.3	0.0	-	29.0	2.5	4.1	1.9	1.9	0.0	-	10.4	1.1	33.4	3.4	0.4	0.0	-	38.3	1.7	13.4	5.2	1.9	0.0	-	22.2	-
PHF	0.951	0.800	0.958	0.625	0.000	-	0.917	0.712	0.897	0.806	0.659	0.000	-	0.929	0.800	0.938	0.708	0.500	0.000	-	0.973	0.625	0.893	0.780	0.558	0.000	-	0.798	0.952
Lights	286	109	22	5	0	-	422	36	59	27	29	0	-	151	15	473	50	6	0	-	544	24	181	77	29	0	-	311	1428
% Lights	97.6	97.3	95.7	100.0	-	-	97.5	97.3	96.7	93.1	100.0	-	-	96.8	93.8	94.8	98.0	100.0	-	-	95.1	96.0	90.5	98.7	100.0	-	-	93.7	95.6
Buses	3	3	0	0	0	-	6	0	1	1	0	0	-	2	0	2	0	0	0	-	2	0	2	0	0	0	-	2	12
% Buses	1.0	2.7	0.0	0.0	-	-	1.4	0.0	1.6	3.4	0.0	-	-	1.3	0.0	0.4	0.0	0.0	-	-	0.3	0.0	1.0	0.0	0.0	-	-	0.6	0.8
Trucks	4	0	1	0	0	-	5	1	1	1	0	0	-	3	1	24	1	0	0	-	26	1	17	1	0	0	-	19	53
% Trucks	1.4	0.0	4.3	0.0	-	-	1.2	2.7	1.6	3.4	0.0	-	-	1.9	6.3	4.8	2.0	0.0	-	-	4.5	4.0	8.5	1.3	0.0	-	-	5.7	3.5
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	-	3	-	-	-	-	-	-	1	-	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-

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Turning Movement Peak Hour Data Plot (7:30 AM)

Port of Albany, NY
US 9W/Glenmont Road
Tuesday, February 26, 2019
Location: 42.601883, -73.791855

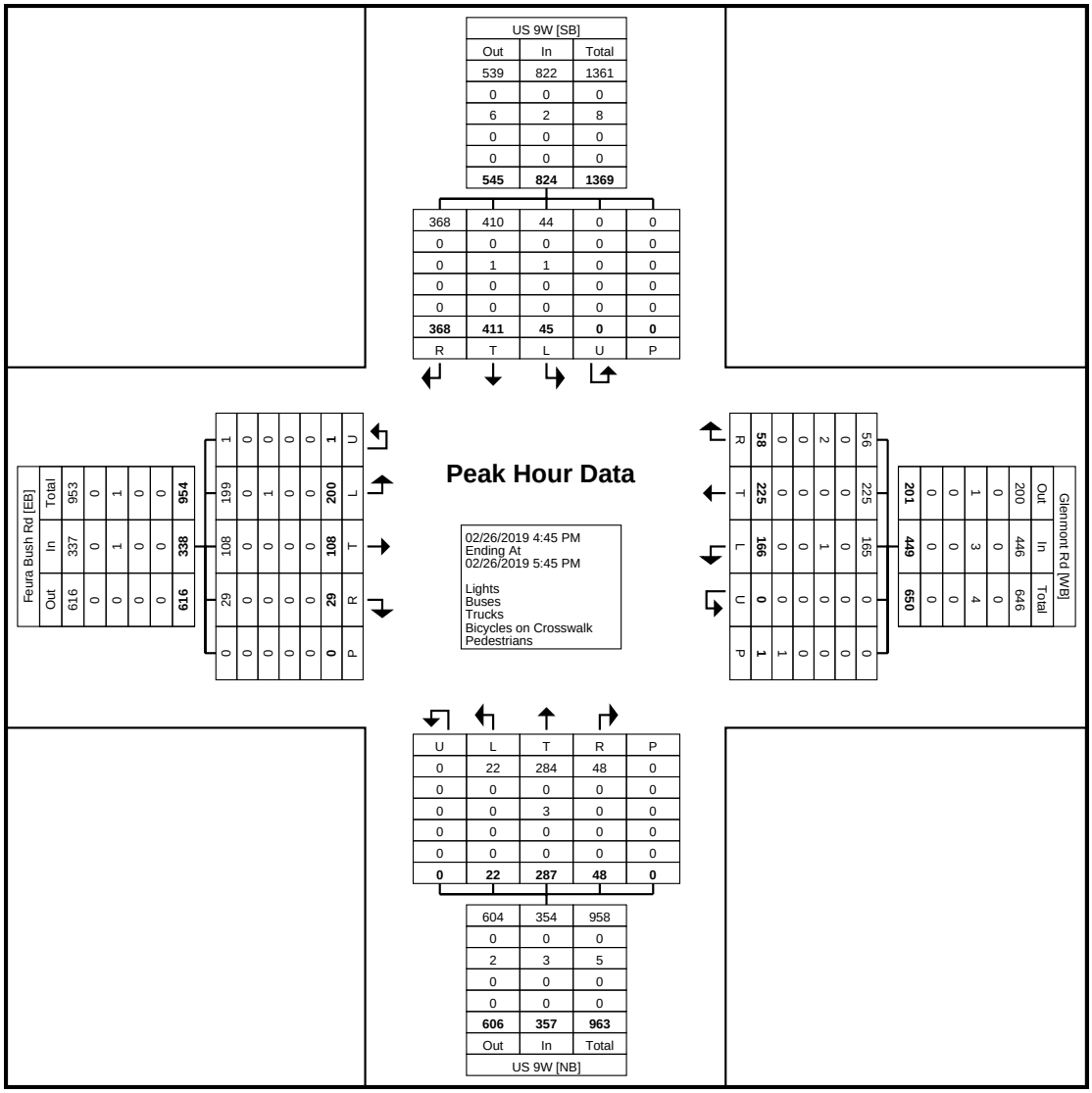
Count Name: US 9W/Glenmont Rd
Site Code: Albany, New York
Start Date: 02/26/2019

Turning Movement Peak Hour Data (4:45 PM)

Start Time	Feura Bush Rd Eastbound							Glenmont Rd Westbound							US 9W Northbound							US 9W Southbound							Int. Total
	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	
4:45 PM	50	32	10	0	0	0	92	35	55	8	1	0	1	99	10	81	6	1	0	0	98	14	99	58	22	0	0	193	482
5:00 PM	43	23	3	6	1	0	76	48	58	15	3	0	0	124	3	69	12	0	0	0	84	12	106	74	17	0	0	209	493
5:15 PM	44	30	3	1	0	0	78	40	61	14	1	0	0	116	5	61	16	2	0	0	84	10	116	70	30	0	0	226	504
5:30 PM	63	23	1	5	0	0	92	43	51	12	4	0	0	110	4	76	10	1	0	0	91	9	90	56	41	0	0	196	489
Total	200	108	17	12	1	0	338	166	225	49	9	0	1	449	22	287	44	4	0	0	357	45	411	258	110	0	0	824	1968
Approach %	59.2	32.0	5.0	3.6	0.3	-	-	37.0	50.1	10.9	2.0	0.0	-	-	6.2	80.4	12.3	1.1	0.0	-	-	5.5	49.9	31.3	13.3	0.0	-	-	-
Total %	10.2	5.5	0.9	0.6	0.1	-	17.2	8.4	11.4	2.5	0.5	0.0	-	22.8	1.1	14.6	2.2	0.2	0.0	-	18.1	2.3	20.9	13.1	5.6	0.0	-	41.9	-
PHF	0.794	0.844	0.425	0.500	0.250	-	0.918	0.865	0.922	0.817	0.563	0.000	-	0.905	0.550	0.886	0.688	0.500	0.000	-	0.911	0.804	0.886	0.872	0.671	0.000	-	0.912	0.976
Lights	199	108	17	12	1	-	337	165	225	48	8	0	-	446	22	284	44	4	0	-	354	44	410	258	110	0	-	822	1959
% Lights	99.5	100.0	100.0	100.0	100.0	-	99.7	99.4	100.0	98.0	88.9	-	-	99.3	100.0	99.0	100.0	100.0	-	-	99.2	97.8	99.8	100.0	100.0	-	-	99.8	99.5
Buses	0	0	0	0	0	-	0	0	0	0	0	0	-	0	0	0	0	0	0	-	0	0	0	0	0	0	-	0	0
% Buses	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Trucks	1	0	0	0	0	-	1	1	0	1	1	0	-	3	0	3	0	0	0	-	3	1	1	0	0	0	-	2	9
% Trucks	0.5	0.0	0.0	0.0	0.0	-	0.3	0.6	0.0	2.0	11.1	-	-	0.7	0.0	1.0	0.0	0.0	-	-	0.8	2.2	0.2	0.0	0.0	-	-	0.2	0.5
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	-	1	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Port of Albany, NY
US 9W/Glenmont Road
Tuesday, February 26, 2019
Location: 42.601883, -73.791855

Count Name: US 9W/Glenmont Rd
Site Code: Albany, New York
Start Date: 02/26/2019



Turning Movement Peak Hour Data Plot (4:45 PM)

Tri-State Traffic Data Inc

184 Baker Rd
Coatesville, PA 19320

Road Name: NY 144 - River Rd
Segment: 110' N of Anders Lane
Ctr#: 36067

GPS: 42.602516, -73.769694

Northbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
06/17/19	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	**3**	**143**	**36**	2	**11**	0	0	**2**	**5**	0	0	0	0	**202**
18:00	2	97	18	1	5	**2**	0	0	2	0	0	0	0	127
19:00	3	91	23	1	2	0	0	0	0	0	0	0	0	120
20:00	2	59	14	2	4	0	0	0	1	0	0	0	0	82
21:00	0	36	9	4	6	0	0	1	1	0	0	0	0	57
22:00	0	32	8	**5**	6	0	0	0	2	0	0	0	0	53
23:00	0	18	4	0	2	0	0	0	1	0	0	0	0	25
Day Total	10	476	112	15	36	2	0	3	12	0	0	0	0	666
Percent	1.5%	71.5%	16.8%	2.3%	5.4%	0.3%	0.0%	0.5%	1.8%	0.0%	0.0%	0.0%	0.0%	
AM Peak Vol.														
PM Peak	17:00	17:00	17:00	22:00	17:00	18:00		17:00	17:00					17:00
Vol.	3	143	36	5	11	2		2	5					202

Tri-State Traffic Data Inc

184 Baker Rd
Coatesville, PA 19320

Road Name: NY 144 - River Rd
Segment: 110' N of Anders Lane
Ctr#: 36067

GPS: 42.602516, -73.769694

Northbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
06/18/19	0	18	5	3	2	0	0	1	2	0	0	0	0	31
01:00	1	8	4	3	2	0	0	0	1	0	0	0	0	19
02:00	0	8	3	0	0	0	0	0	1	0	0	0	0	12
03:00	0	12	4	1	1	0	0	0	11	0	0	0	0	29
04:00	0	11	7	3	3	0	0	1	3	0	0	0	0	28
05:00	0	46	32	5	8	2	3	0	7	0	0	0	0	103
06:00	4	118	56	3	13	3	2	0	12	0	0	0	0	211
07:00	1	**344**	**64**	**13**	24	1	**5**	**4**	9	0	0	0	0	**465**
08:00	**5**	250	64	6	18	**6**	2	1	**13**	0	0	0	0	365
09:00	2	115	38	10	**28**	2	2	3	12	0	0	0	0	212
10:00	1	96	34	7	24	1	2	1	9	**2**	0	0	0	177
11:00	0	101	36	4	23	1	2	4	8	0	0	0	0	179
12 PM	0	91	42	5	15	2	2	**1**	**11**	0	0	0	0	169
13:00	**2**	76	34	**9**	**26**	2	**4**	1	3	0	0	0	0	157
14:00	1	109	**50**	4	12	**6**	1	0	8	0	0	0	0	191
15:00	1	116	34	6	11	0	1	0	8	0	0	0	0	177
16:00	1	**146**	29	1	12	0	0	1	3	**1**	0	0	0	**194**
17:00	2	116	32	0	8	0	0	1	4	0	0	0	0	163
18:00	1	74	28	3	6	0	0	1	2	0	0	0	0	115
19:00	1	65	15	1	8	0	0	0	0	0	0	0	0	90
20:00	1	50	10	1	10	0	0	1	1	0	0	0	0	74
21:00	0	44	10	3	7	0	0	1	3	0	0	0	0	68
22:00	0	30	8	2	3	0	0	0	2	0	0	0	0	45
23:00	0	17	2	0	1	0	0	0	1	0	0	0	0	21
Day Total	24	2061	641	93	265	26	26	22	134	3	0	0	0	3295
Percent	0.7%	62.5%	19.5%	2.8%	8.0%	0.8%	0.8%	0.7%	4.1%	0.1%	0.0%	0.0%	0.0%	
AM Peak	08:00	07:00	07:00	07:00	09:00	08:00	07:00	07:00	08:00	10:00				07:00
Vol.	5	344	64	13	28	6	5	4	13	2				465
PM Peak	13:00	16:00	14:00	13:00	13:00	14:00	13:00	12:00	12:00	16:00				16:00
Vol.	2	146	50	9	26	6	4	1	11	1				194

Tri-State Traffic Data Inc

184 Baker Rd
Coatesville, PA 19320

Road Name: NY 144 - River Rd
Segment: 110' N of Anders Lane
Ctr#: 36067

GPS: 42.602516, -73.769694

Northbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
06/19/19	0	15	1	1	3	0	0	0	1	0	0	0	0	21
01:00	0	2	1	0	2	0	0	0	2	0	0	0	1	8
02:00	0	4	1	0	3	0	1	1	0	0	0	0	0	10
03:00	0	13	4	1	0	0	0	1	5	0	0	0	0	24
04:00	0	9	6	2	7	2	3	1	6	1	0	0	1	38
05:00	1	44	28	6	8	0	3	0	6	0	0	0	0	96
06:00	**5**	104	51	2	9	0	0	1	10	1	0	0	**2**	185
07:00	1	**368**	57	2	16	0	1	2	4	0	0	0	1	**452**
08:00	1	245	**61**	**12**	15	**4**	**8**	0	7	**2**	0	0	0	355
09:00	0	112	24	8	16	1	0	1	10	0	0	0	1	173
10:00	2	82	30	5	**24**	2	1	**3**	6	1	0	0	0	156
11:00	1	92	33	7	12	3	4	2	**11**	1	0	0	0	166
12 PM	0	104	28	**8**	7	2	**3**	2	**13**	0	0	0	0	167
13:00	0	102	**45**	7	**22**	3	2	**4**	4	**1**	0	0	0	190
14:00	**6**	117	35	6	8	1	1	0	9	0	0	0	0	183
15:00	2	126	33	1	9	**4**	2	3	7	0	0	0	0	187
16:00	0	145	25	2	16	0	1	0	5	0	0	0	0	194
17:00	3	**151**	32	2	6	1	0	0	4	0	0	0	0	**199**
18:00	2	108	31	1	8	0	0	1	2	0	0	0	0	153
19:00	1	64	17	0	7	0	0	1	2	1	0	0	0	93
20:00	0	59	11	1	7	0	0	0	4	0	0	0	0	82
21:00	1	34	7	2	3	0	0	0	1	1	0	0	0	49
22:00	0	24	7	1	3	0	0	1	2	0	0	0	0	38
23:00	0	13	4	1	2	0	0	0	0	0	0	0	0	20
Day Total	26	2137	572	78	213	23	30	24	121	9	0	0	6	3239
Percent	0.8%	66.0%	17.7%	2.4%	6.6%	0.7%	0.9%	0.7%	3.7%	0.3%	0.0%	0.0%	0.2%	
AM Peak	06:00	07:00	08:00	08:00	10:00	08:00	08:00	10:00	11:00	08:00			06:00	07:00
Vol.	5	368	61	12	24	4	8	3	11	2			2	452
PM Peak	14:00	17:00	13:00	12:00	13:00	15:00	12:00	13:00	12:00	13:00				17:00
Vol.	6	151	45	8	22	4	3	4	13	1				199

Tri-State Traffic Data Inc

184 Baker Rd
Coatesville, PA 19320

Road Name: NY 144 - River Rd
Segment: 110' N of Anders Lane
Ctr#: 36067

GPS: 42.602516, -73.769694

Northbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
06/20/19	0	18	6	2	0	0	0	0	2	0	0	0	0	28
01:00	0	7	2	1	1	1	0	0	0	0	0	0	0	12
02:00	0	5	2	3	2	0	0	1	1	0	0	0	0	14
03:00	0	8	3	1	1	0	0	0	3	0	0	0	0	16
04:00	0	9	7	1	1	1	0	0	7	0	0	0	0	26
05:00	0	39	34	2	8	2	2	0	5	**1**	0	0	0	93
06:00	0	116	40	5	13	0	0	1	9	0	0	0	0	184
07:00	**2**	**366**	**59**	6	18	1	**6**	**4**	7	0	0	0	**1**	**470**
08:00	2	236	51	11	**23**	1	4	1	11	0	0	0	0	340
09:00	0	126	42	**14**	15	1	1	2	6	0	0	0	0	207
10:00	2	93	35	7	19	**4**	1	1	**20**	0	0	0	0	182
11:00	1	93	32	8	22	3	3	1	7	0	0	0	0	170
12 PM	2	111	26	**8**	17	1	1	**3**	5	0	0	0	0	174
13:00	2	85	38	5	**23**	0	0	2	**7**	0	0	0	0	162
14:00	0	106	31	3	13	**3**	**2**	1	5	0	0	0	0	164
15:00	2	129	32	4	8	3	0	0	5	0	0	0	**1**	184
16:00	**4**	**141**	40	2	12	1	2	1	5	0	0	0	0	**208**
17:00	2	126	**48**	5	13	1	0	0	1	0	0	0	0	196
18:00	0	95	29	0	6	0	0	3	4	0	0	0	0	137
19:00	1	61	14	3	4	0	0	1	3	0	0	0	0	87
20:00	1	53	6	0	3	0	0	0	0	0	0	0	0	63
21:00	0	35	14	2	3	0	0	0	4	0	0	0	0	58
22:00	0	32	8	1	0	0	0	1	3	0	0	0	0	45
23:00	0	10	4	2	1	0	0	1	1	0	0	0	0	19
Day Total	21	2100	603	96	226	23	22	24	121	1	0	0	2	3239
Percent	0.6%	64.8%	18.6%	3.0%	7.0%	0.7%	0.7%	0.7%	3.7%	0.0%	0.0%	0.0%	0.1%	
AM Peak	07:00	07:00	07:00	09:00	08:00	10:00	07:00	07:00	10:00	05:00			07:00	07:00
Vol.	2	366	59	14	23	4	6	4	20	1			1	470
PM Peak	16:00	16:00	17:00	12:00	13:00	14:00	14:00	12:00	13:00				15:00	16:00
Vol.	4	141	48	8	23	3	2	3	7				1	208

Tri-State Traffic Data Inc

184 Baker Rd
Coatesville, PA 19320

Road Name: NY 144 - River Rd
Segment: 110' N of Anders Lane
Ctr#: 36067

GPS: 42.602516, -73.769694

Northbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
06/21/19	0	17	4	1	1	0	0	0	0	0	0	0	0	23
01:00	0	2	2	0	0	0	0	**1**	2	0	0	0	0	7
02:00	0	5	5	3	5	0	0	0	0	0	0	0	0	18
03:00	0	3	2	0	0	0	0	0	5	0	0	0	0	10
04:00	0	18	6	**4**	4	0	2	0	4	**1**	0	0	0	39
05:00	0	40	21	1	4	0	0	0	4	0	0	0	0	70
06:00	**1**	**104**	**43**	3	**10**	0	**3**	0	**10**	0	0	0	0	**174**
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Day Total	1	189	83	12	24	0	5	1	25	1	0	0	0	341
Percent	0.3%	55.4%	24.3%	3.5%	7.0%	0.0%	1.5%	0.3%	7.3%	0.3%	0.0%	0.0%	0.0%	
AM Peak	06:00	06:00	06:00	04:00	06:00		06:00	01:00	06:00	04:00				06:00
Vol.	1	104	43	4	10		3	1	10	1				174
PM Peak														
Vol.														
Grand Total	82	6963	2011	294	764	74	83	74	413	14	0	0	8	10780
Percent	0.8%	64.6%	18.7%	2.7%	7.1%	0.7%	0.8%	0.7%	3.8%	0.1%	0.0%	0.0%	0.1%	

Tri-State Traffic Data Inc

184 Baker Rd
Coatesville, PA 19320

Road Name: NY 144 - River Rd
Segment: 110' N of Anders Lane
Ctr#: 36067

GPS: 42.602516, -73.769694

Southbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
06/17/19	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	**10**	**266**	**77**	0	**13**	**1**	**1**	0	**2**	0	0	0	0	**370**
18:00	3	148	34	1	7	1	0	0	1	0	0	0	0	195
19:00	1	104	22	1	8	0	0	0	1	0	0	0	0	137
20:00	2	90	18	3	8	0	1	0	1	0	0	0	0	123
21:00	1	57	18	**4**	7	0	0	0	2	**1**	0	0	0	90
22:00	0	42	11	0	0	0	0	0	1	0	0	0	0	54
23:00	1	36	4	3	5	1	0	0	2	0	0	0	0	52
Day Total	18	743	184	12	48	3	2	0	10	1	0	0	0	1021
Percent	1.8%	72.8%	18.0%	1.2%	4.7%	0.3%	0.2%	0.0%	1.0%	0.1%	0.0%	0.0%	0.0%	
AM Peak Vol.														
PM Peak	17:00	17:00	17:00	21:00	17:00	17:00	17:00		17:00	21:00				17:00
Vol.	10	266	77	4	13	1	1		2	1				370

Tri-State Traffic Data Inc

184 Baker Rd
Coatesville, PA 19320

Road Name: NY 144 - River Rd
Segment: 110' N of Anders Lane
Ctr#: 36067

GPS: 42.602516, -73.769694

Southbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
06/18/19	0	14	9	4	3	0	0	0	0	0	0	0	0	30
01:00	0	11	2	1	0	0	0	0	2	0	0	0	0	16
02:00	0	10	1	1	1	0	0	0	4	0	0	0	0	17
03:00	0	10	10	4	4	0	0	0	4	0	0	0	0	32
04:00	0	11	12	4	7	0	1	0	6	0	0	0	0	41
05:00	3	35	18	6	9	4	2	**1**	3	0	0	0	0	81
06:00	2	77	45	7	14	2	1	1	5	1	0	0	0	155
07:00	3	85	**47**	7	14	5	1	0	8	1	0	0	0	171
08:00	3	**105**	33	**8**	19	4	0	1	9	**2**	0	0	0	**184**
09:00	2	79	38	7	**22**	6	2	0	**17**	0	0	0	0	173
10:00	2	85	34	7	19	**7**	**4**	1	10	0	0	0	0	169
11:00	**4**	89	35	2	18	2	1	1	12	0	0	0	0	164
12 PM	1	89	38	6	**21**	3	1	**1**	5	0	0	0	0	165
13:00	1	104	43	6	17	**7**	3	0	**11**	0	0	0	**1**	193
14:00	1	106	52	**12**	12	2	1	0	9	0	0	0	0	195
15:00	2	185	60	7	17	2	**4**	1	11	**1**	0	0	0	290
16:00	3	**297**	**66**	1	8	3	0	0	8	0	0	0	0	**386**
17:00	**5**	285	60	2	6	2	0	0	4	0	0	0	0	364
18:00	3	132	38	4	5	0	0	1	3	0	0	0	0	186
19:00	0	112	20	4	8	1	0	0	1	0	0	0	0	146
20:00	3	88	19	4	7	0	0	0	4	0	0	0	0	125
21:00	1	57	16	2	3	0	0	0	1	0	0	0	0	80
22:00	1	39	7	3	4	1	0	0	1	0	0	0	0	56
23:00	0	42	7	0	0	0	0	0	4	0	0	0	0	53
Day Total	40	2147	710	109	238	51	21	8	142	5	0	0	1	3472
Percent	1.2%	61.8%	20.4%	3.1%	6.9%	1.5%	0.6%	0.2%	4.1%	0.1%	0.0%	0.0%	0.0%	
AM Peak	11:00	08:00	07:00	08:00	09:00	10:00	10:00	05:00	09:00	08:00				08:00
Vol.	4	105	47	8	22	7	4	1	17	2				184
PM Peak	17:00	16:00	16:00	14:00	12:00	13:00	15:00	12:00	13:00	15:00			13:00	16:00
Vol.	5	297	66	12	21	7	4	1	11	1			1	386

Tri-State Traffic Data Inc

184 Baker Rd
Coatesville, PA 19320

Road Name: NY 144 - River Rd
Segment: 110' N of Anders Lane
Ctr#: 36067

GPS: 42.602516, -73.769694

Southbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
06/19/19	0	20	2	0	0	0	0	0	2	0	0	0	0	24
01:00	1	11	2	0	1	0	0	0	2	0	0	0	0	17
02:00	0	8	3	1	0	0	0	0	4	0	0	0	0	16
03:00	2	10	4	1	3	2	0	0	2	0	0	0	0	24
04:00	1	13	20	4	4	0	0	0	9	0	0	0	0	51
05:00	0	29	19	7	9	1	0	0	6	0	0	0	0	71
06:00	3	87	**51**	8	9	5	0	0	7	0	0	0	**1**	171
07:00	**6**	93	24	1	10	1	**2**	**3**	14	0	0	0	0	154
08:00	5	84	37	8	15	4	1	1	8	0	0	0	1	164
09:00	4	95	34	6	12	**8**	2	1	8	0	0	0	0	170
10:00	4	75	34	**9**	**17**	4	1	2	12	0	0	0	1	159
11:00	3	**105**	36	4	12	2	2	1	**17**	0	0	0	0	**182**
12 PM	3	116	36	8	9	4	1	**1**	7	0	0	0	**1**	186
13:00	4	90	36	7	3	**5**	0	1	4	**2**	0	0	0	152
14:00	3	135	51	4	10	2	**2**	0	5	0	0	0	0	212
15:00	**5**	186	54	**10**	10	3	0	1	**14**	0	0	0	0	283
16:00	1	307	**66**	0	**13**	3	0	1	10	1	0	0	0	**402**
17:00	5	**309**	63	2	4	2	0	1	4	0	0	0	0	390
18:00	0	134	39	2	6	2	0	0	3	0	0	0	0	186
19:00	0	113	24	3	5	2	0	1	3	0	0	0	0	151
20:00	0	99	15	1	3	0	1	0	3	0	0	0	0	122
21:00	1	62	10	4	5	0	0	0	3	0	0	0	1	86
22:00	0	37	14	1	2	0	0	0	3	0	0	0	1	58
23:00	1	35	5	1	0	0	0	0	1	0	0	0	0	43
Day Total	52	2253	679	92	162	50	12	14	151	3	0	0	6	3474
Percent	1.5%	64.9%	19.5%	2.6%	4.7%	1.4%	0.3%	0.4%	4.3%	0.1%	0.0%	0.0%	0.2%	
AM Peak	07:00	11:00	06:00	10:00	10:00	09:00	07:00	07:00	11:00				06:00	11:00
Vol.	6	105	51	9	17	8	2	3	17				1	182
PM Peak	15:00	17:00	16:00	15:00	16:00	13:00	14:00	12:00	15:00	13:00			12:00	16:00
Vol.	5	309	66	10	13	5	2	1	14	2			1	402

Tri-State Traffic Data Inc

184 Baker Rd
Coatesville, PA 19320

Road Name: NY 144 - River Rd
Segment: 110' N of Anders Lane
Ctr#: 36067

GPS: 42.602516, -73.769694

Southbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
06/20/19	0	24	2	0	0	0	0	0	1	0	0	0	0	27
01:00	3	6	3	1	1	1	1	0	1	0	0	0	0	17
02:00	0	9	1	1	1	0	0	0	0	0	0	0	0	12
03:00	0	7	7	3	3	0	0	0	3	0	0	0	0	23
04:00	1	11	14	2	2	1	0	0	9	0	0	0	0	40
05:00	0	30	16	3	5	1	0	0	6	0	0	0	0	61
06:00	2	79	37	3	18	3	**2**	1	6	0	0	0	0	151
07:00	**5**	**94**	30	**10**	14	3	1	**3**	4	0	0	0	**1**	165
08:00	1	82	**40**	10	**22**	3	1	0	10	0	0	0	0	**169**
09:00	3	87	28	6	19	3	0	0	**16**	0	0	0	0	162
10:00	1	70	34	9	22	**4**	2	1	9	0	0	0	0	152
11:00	4	86	36	3	13	3	1	2	11	0	0	0	0	159
12 PM	1	97	31	3	**20**	**2**	2	1	8	0	0	0	0	165
13:00	**5**	120	35	4	14	2	**4**	**3**	8	0	0	0	0	195
14:00	1	123	38	**7**	14	1	3	0	**11**	0	0	0	0	198
15:00	5	181	59	6	19	2	1	0	5	0	0	0	0	278
16:00	5	284	81	1	18	0	1	0	7	0	0	0	0	397
17:00	4	**292**	**82**	5	12	1	0	0	9	0	0	0	0	**405**
18:00	1	123	27	7	8	0	0	1	6	0	0	0	0	173
19:00	2	120	20	2	8	2	0	0	1	0	0	0	0	155
20:00	0	85	18	3	4	0	0	0	1	0	0	0	**1**	112
21:00	0	55	11	0	0	0	0	0	2	0	0	0	0	68
22:00	0	41	10	1	1	0	0	0	1	0	0	0	0	54
23:00	0	43	7	1	1	0	0	0	2	0	0	0	0	54
Day Total	44	2149	667	91	239	32	19	12	137	0	0	0	2	3392
Percent	1.3%	63.4%	19.7%	2.7%	7.0%	0.9%	0.6%	0.4%	4.0%	0.0%	0.0%	0.0%	0.1%	
AM Peak	07:00	07:00	08:00	07:00	08:00	10:00	06:00	07:00	09:00				07:00	08:00
Vol.	5	94	40	10	22	4	2	3	16				1	169
PM Peak	13:00	17:00	17:00	14:00	12:00	12:00	13:00	13:00	14:00				20:00	17:00
Vol.	5	292	82	7	20	2	4	3	11				1	405

Tri-State Traffic Data Inc

184 Baker Rd
Coatesville, PA 19320

Road Name: NY 144 - River Rd
Segment: 110' N of Anders Lane
Ctr#: 36067

GPS: 42.602516, -73.769694

Southbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
06/21/19	0	9	2	0	0	0	0	0	2	0	0	0	0	13
01:00	**1**	10	11	**4**	4	**2**	0	0	3	0	0	0	0	35
02:00	0	6	3	0	0	0	0	0	2	0	0	0	0	11
03:00	0	7	6	1	2	0	0	0	4	0	0	0	0	20
04:00	1	6	13	2	4	2	0	0	5	0	0	0	0	33
05:00	0	22	11	0	6	0	**1**	0	5	0	0	0	0	45
06:00	1	**54**	**28**	3	**10**	2	0	0	**7**	0	0	0	0	**105**
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Day Total	3	114	74	10	26	6	1	0	28	0	0	0	0	262
Percent	1.1%	43.5%	28.2%	3.8%	9.9%	2.3%	0.4%	0.0%	10.7%	0.0%	0.0%	0.0%	0.0%	
AM Peak	01:00	06:00	06:00	01:00	06:00	01:00	05:00		06:00					06:00
Vol.	1	54	28	4	10	2	1		7					105
PM Peak Vol.														
Grand Total	157	7406	2314	314	713	142	55	34	468	9	0	0	9	11621
Percent	1.4%	63.7%	19.9%	2.7%	6.1%	1.2%	0.5%	0.3%	4.0%	0.1%	0.0%	0.0%	0.1%	

Tri-State Traffic Data Inc

184 Baker Rd
Coatesville, PA 19320

Direction 1

Start	1	21	26	31	36	41	46	51	56	61	66	71	76	81	86	
Time	20	25	30	35	40	45	50	55	60	65	70	75	80	85	9999	Total
06/17/19	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	5	0	2	7	5	12	55	75	38	3	1	0	0	0	0	203
18:00	1	0	0	0	2	15	36	48	20	4	0	0	1	0	0	127
19:00	0	0	1	0	4	13	52	27	18	3	1	0	1	0	0	120
20:00	0	0	1	0	3	5	26	29	12	4	2	0	0	0	0	82
21:00	0	0	0	0	0	7	19	17	9	4	1	0	0	0	0	57
22:00	0	0	2	0	1	16	15	7	9	3	0	0	0	0	0	53
23:00	0	0	0	0	0	2	8	6	8	0	1	0	0	0	0	25
Total	6	0	6	7	15	70	211	209	114	21	6	0	2	0	0	667

Tri-State Traffic Data Inc

184 Baker Rd
Coatesville, PA 19320

Direction 1

Start Time	1 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 80	81 85	86 9999	Total
06/18/19	0	0	0	0	0	1	12	10	4	3	1	0	0	0	0	31
01:00	0	0	0	0	2	7	6	0	4	0	0	0	0	0	0	19
02:00	0	0	0	1	0	0	3	0	5	3	0	0	0	0	0	12
03:00	0	0	0	0	0	1	14	4	6	4	0	0	0	0	0	29
04:00	0	0	0	0	0	0	5	15	4	4	0	0	0	0	0	28
05:00	0	0	0	0	3	4	25	48	13	5	5	0	0	0	0	103
06:00	5	1	1	1	11	13	48	75	52	5	0	0	0	0	0	212
07:00	4	0	0	4	12	55	161	155	64	11	0	0	0	0	0	466
08:00	7	0	1	4	22	57	113	104	50	7	0	1	0	0	0	366
09:00	4	1	1	1	7	53	68	56	22	0	0	0	0	0	0	213
10:00	2	1	0	0	7	43	55	54	15	0	0	0	0	0	0	177
11:00	3	0	1	2	17	47	70	30	9	2	0	0	0	0	0	181
12 PM	5	1	0	0	7	31	66	45	12	1	0	1	0	0	0	169
13:00	11	6	0	3	15	31	46	34	12	1	0	0	0	0	0	159
14:00	4	0	0	5	15	27	62	57	18	2	1	0	0	0	0	191
15:00	0	0	0	0	6	21	66	49	30	5	0	0	0	0	0	177
16:00	4	2	1	0	1	12	71	81	18	5	0	1	0	0	0	196
17:00	0	1	1	2	10	11	46	71	19	2	0	0	0	0	0	163
18:00	0	0	0	3	3	10	32	42	22	2	1	0	0	0	0	115
19:00	2	0	0	1	4	11	22	26	21	3	0	0	0	0	0	90
20:00	1	1	0	0	2	13	17	27	9	3	0	0	0	0	1	74
21:00	0	0	0	3	0	15	20	23	4	3	0	0	0	0	0	68
22:00	0	0	0	0	1	11	15	12	4	2	0	0	0	0	0	45
23:00	1	0	0	0	0	2	3	6	5	3	1	0	0	0	0	21
Total	53	14	6	30	145	476	1046	1024	422	76	9	3	0	0	1	3305

Tri-State Traffic Data Inc

184 Baker Rd
Coatesville, PA 19320

Direction 1

Start Time	1 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 80	81 85	86 9999	Total
06/19/19	0	0	0	0	0	1	5	7	5	3	0	0	0	0	0	21
01:00	0	0	0	0	1	1	1	2	1	2	0	0	0	0	0	8
02:00	1	0	0	0	0	0	3	4	2	0	0	0	0	0	0	10
03:00	0	0	0	0	0	2	6	4	7	4	1	0	0	0	0	24
04:00	0	0	0	0	1	6	15	11	5	0	0	0	0	0	0	38
05:00	1	0	0	0	1	13	21	25	30	5	0	0	0	0	0	96
06:00	3	0	0	0	14	24	27	55	53	10	0	0	0	0	0	186
07:00	9	0	1	5	18	45	112	182	70	9	1	1	0	0	0	453
08:00	5	0	0	2	20	60	99	125	39	6	0	0	0	0	0	356
09:00	4	0	2	7	5	21	64	46	20	3	1	0	0	0	0	173
10:00	5	0	0	0	14	34	45	47	11	1	0	0	0	0	0	157
11:00	2	1	0	2	4	34	54	48	18	3	1	0	0	0	0	167
12 PM	0	0	0	0	3	28	59	56	16	5	0	0	0	0	0	167
13:00	5	0	0	3	7	14	61	66	33	3	0	0	0	0	0	192
14:00	0	0	0	1	8	31	69	54	17	2	1	0	0	0	0	183
15:00	2	1	0	3	0	22	66	71	19	3	1	0	0	0	0	188
16:00	4	1	1	3	2	24	61	78	20	1	0	0	0	0	0	195
17:00	4	3	2	3	2	21	56	74	27	7	1	0	0	0	0	200
18:00	3	0	0	1	4	16	52	49	19	7	3	0	0	0	0	154
19:00	0	0	0	0	0	13	31	40	9	0	0	0	0	0	0	93
20:00	1	0	0	0	2	16	29	20	10	4	0	0	0	0	0	82
21:00	1	0	0	0	0	7	8	23	6	4	0	0	0	0	0	49
22:00	0	0	0	0	2	3	13	8	9	2	1	0	0	0	0	38
23:00	0	0	0	0	0	1	11	6	1	1	0	0	0	0	0	20
Total	50	6	6	30	108	437	968	1101	447	85	11	1	0	0	0	3250

Tri-State Traffic Data Inc

184 Baker Rd
Coatesville, PA 19320

Direction 1

Start	1	21	26	31	36	41	46	51	56	61	66	71	76	81	86	
Time	20	25	30	35	40	45	50	55	60	65	70	75	80	85	9999	Total
06/20/19	0	0	0	0	0	3	9	6	6	3	1	0	0	0	0	28
01:00	0	0	0	0	0	3	4	1	4	0	0	0	0	0	0	12
02:00	0	0	0	0	0	2	1	5	6	0	0	0	0	0	0	14
03:00	0	0	0	0	0	0	2	8	3	2	1	0	0	0	0	16
04:00	1	0	0	0	1	2	6	10	5	1	0	0	0	0	0	26
05:00	2	0	0	1	8	12	22	29	17	2	1	0	0	0	0	94
06:00	3	0	0	2	12	17	28	73	42	6	1	0	0	0	0	184
07:00	6	0	1	5	6	54	154	169	73	3	0	0	1	0	0	472
08:00	15	8	22	19	21	47	93	68	39	9	0	0	0	0	0	341
09:00	0	0	0	3	4	25	73	77	22	2	0	0	1	0	0	207
10:00	2	0	1	2	8	33	67	43	20	6	0	0	0	0	0	182
11:00	2	1	2	0	3	35	56	49	21	2	0	0	0	0	0	171
12 PM	4	1	1	5	0	20	50	60	30	3	0	0	0	0	0	174
13:00	1	1	1	1	9	14	50	55	27	4	0	0	0	0	0	163
14:00	2	3	0	2	3	32	45	50	24	2	0	0	0	1	0	164
15:00	4	0	3	5	11	14	68	52	23	6	0	0	0	0	0	186
16:00	6	0	1	5	7	13	68	71	30	6	1	0	0	0	1	209
17:00	5	2	1	1	19	25	70	51	21	2	0	0	0	0	0	197
18:00	0	0	1	0	2	15	34	47	33	4	1	0	0	0	0	137
19:00	0	0	1	0	2	14	22	25	17	5	1	0	0	0	0	87
20:00	0	2	0	1	5	7	13	16	16	3	0	0	0	0	0	63
21:00	1	0	0	0	0	16	14	17	9	0	1	0	0	0	0	58
22:00	0	0	0	0	1	4	14	17	7	2	0	0	0	0	0	45
23:00	0	0	0	0	0	4	6	7	1	1	0	0	0	0	0	19
Total	54	18	35	52	122	411	969	1006	496	74	8	0	2	1	1	3249

Tri-State Traffic Data Inc

184 Baker Rd
Coatesville, PA 19320

Direction 1

Start	1	21	26	31	36	41	46	51	56	61	66	71	76	81	86	
Time	20	25	30	35	40	45	50	55	60	65	70	75	80	85	9999	Total
06/21/19	0	0	0	1	3	3	6	5	4	1	0	0	0	0	0	23
01:00	0	0	0	0	2	2	0	1	2	0	0	0	0	0	0	7
02:00	0	0	0	0	0	6	6	2	4	0	0	0	0	0	0	18
03:00	1	0	0	0	1	5	2	1	0	0	0	0	0	0	0	10
04:00	0	0	0	0	3	5	11	9	10	1	0	0	0	0	0	39
05:00	1	0	0	0	1	5	15	27	14	6	1	0	0	0	0	70
06:00	3	0	1	1	7	28	51	45	38	1	0	0	0	0	0	175
07:00	2	1	4	4	13	33	130	156	68	7	0	1	0	0	0	419
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	7	1	5	6	30	87	221	246	140	16	1	1	0	0	0	761
Grand Total	170	39	58	125	420	1481	3415	3586	1619	272	35	5	4	1	2	11232

Stats

15th Percentile :	42 MPH
50th Percentile :	49 MPH
85th Percentile :	55 MPH
95th Percentile :	59 MPH
Mean Speed(Average) :	50 MPH
10 MPH Pace Speed :	46-55 MPH
Number in Pace :	7001
Percent in Pace :	62.3%
Number of Vehicles > 55 MPH :	1938
Percent of Vehicles > 55 MPH :	17.3%

Tri-State Traffic Data Inc

184 Baker Rd
Coatesville, PA 19320

Direction 2

Start Time	1 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 80	81 85	86 9999	Total
06/17/19	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	1	0	2	1	8	48	153	111	38	8	0	0	0	0	0	370
18:00	1	0	0	1	2	26	69	56	34	4	0	1	1	0	0	195
19:00	1	0	0	3	5	16	35	53	18	5	0	0	0	0	1	137
20:00	0	0	1	1	3	19	33	38	24	4	0	0	0	0	0	123
21:00	0	0	0	1	2	16	28	29	10	4	0	0	0	0	0	90
22:00	0	0	2	0	1	6	9	15	15	6	0	0	0	0	0	54
23:00	0	1	2	2	0	3	16	10	14	4	0	0	0	0	0	52
Total	3	1	7	9	21	134	343	312	153	35	0	1	1	0	1	1021

Tri-State Traffic Data Inc

184 Baker Rd
Coatesville, PA 19320

Direction 2

Start	1	21	26	31	36	41	46	51	56	61	66	71	76	81	86	
Time	20	25	30	35	40	45	50	55	60	65	70	75	80	85	9999	Total
06/18/19	0	0	0	0	0	0	4	10	10	5	1	0	0	0	0	30
01:00	0	0	0	0	1	1	7	3	2	2	0	0	0	0	0	16
02:00	0	0	0	0	1	1	5	4	5	0	1	0	0	0	0	17
03:00	0	0	0	0	1	0	7	7	14	3	0	0	0	0	0	32
04:00	0	0	0	0	0	7	9	10	13	2	0	0	0	0	0	41
05:00	0	0	0	0	6	11	18	24	21	1	0	0	0	0	0	81
06:00	1	1	0	1	6	28	33	54	24	7	0	0	0	0	0	155
07:00	6	0	1	4	2	30	53	55	18	3	0	0	0	0	0	172
08:00	1	0	0	1	27	34	70	30	18	2	1	0	0	0	0	184
09:00	5	6	1	3	26	36	60	31	6	0	0	0	0	0	0	174
10:00	4	0	2	2	14	47	53	34	12	1	0	0	0	0	0	169
11:00	10	1	1	6	14	34	55	35	8	1	1	0	0	0	0	166
12 PM	3	1	2	3	8	28	71	36	8	5	0	0	0	1	0	166
13:00	5	0	0	1	21	52	70	36	10	0	0	0	0	0	0	195
14:00	3	0	0	0	11	44	57	58	21	1	0	0	0	0	0	195
15:00	5	2	2	5	10	42	104	82	35	3	0	0	0	0	0	290
16:00	5	0	3	8	9	58	137	126	39	2	0	0	0	0	0	387
17:00	3	0	1	0	11	47	161	114	24	4	0	0	0	0	0	365
18:00	5	0	2	5	2	27	66	48	30	1	0	0	0	0	0	186
19:00	0	0	0	0	1	18	53	47	22	4	1	0	0	0	0	146
20:00	3	0	0	1	6	18	47	28	17	3	1	1	0	0	0	125
21:00	5	0	0	4	5	13	26	14	13	0	0	0	0	0	0	80
22:00	0	0	0	0	3	13	13	18	8	1	0	0	0	0	0	56
23:00	0	0	0	0	1	4	9	15	22	2	0	0	0	0	0	53
Total	64	11	15	44	186	593	1188	919	400	53	6	1	0	1	0	3481

Tri-State Traffic Data Inc

184 Baker Rd
Coatesville, PA 19320

Direction 2

Start	1	21	26	31	36	41	46	51	56	61	66	71	76	81	86	
Time	20	25	30	35	40	45	50	55	60	65	70	75	80	85	9999	Total
06/19/19	2	0	0	0	0	3	9	6	4	0	0	0	0	0	0	24
01:00	0	0	0	0	1	1	6	2	5	2	0	0	0	0	0	17
02:00	2	0	0	0	0	3	5	6	1	0	0	0	0	0	0	17
03:00	2	0	0	0	0	7	7	3	5	0	0	0	0	0	0	24
04:00	3	0	1	0	3	4	16	20	3	1	1	0	0	0	0	52
05:00	3	0	0	2	1	11	16	32	7	0	0	0	0	0	0	72
06:00	3	0	2	2	5	30	61	55	9	3	1	0	0	0	1	172
07:00	7	4	2	4	9	30	57	38	5	1	0	0	0	0	0	157
08:00	13	1	2	2	6	41	58	35	6	0	0	0	0	0	0	164
09:00	3	0	6	1	17	32	68	35	8	0	0	0	0	0	0	170
10:00	6	1	1	2	11	47	57	28	5	0	0	0	0	1	0	159
11:00	4	1	0	6	21	39	55	41	15	0	0	0	0	0	1	183
12 PM	3	1	0	2	19	53	57	42	8	1	0	0	0	0	0	186
13:00	5	0	0	6	12	30	61	32	8	0	0	0	0	0	0	154
14:00	0	0	2	0	10	49	84	56	10	0	1	0	0	0	0	212
15:00	7	0	0	4	9	46	113	83	19	2	0	0	0	0	0	283
16:00	1	2	3	6	15	73	156	119	27	0	0	0	0	0	0	402
17:00	2	0	1	9	16	72	161	106	16	7	0	0	0	0	0	390
18:00	3	0	0	0	10	44	48	66	14	1	0	0	0	0	0	186
19:00	1	0	0	1	6	25	64	36	15	3	0	0	0	0	0	151
20:00	0	0	1	1	7	25	41	30	14	3	0	0	0	0	0	122
21:00	1	0	0	0	5	16	24	25	11	2	1	0	1	0	0	86
22:00	1	0	0	1	2	8	19	21	5	1	0	0	0	0	0	58
23:00	0	0	0	0	0	3	9	18	13	0	0	0	0	0	0	43
Total	72	10	21	49	185	692	1252	935	233	27	4	0	1	1	2	3484

Tri-State Traffic Data Inc

184 Baker Rd
Coatesville, PA 19320

Direction 2

Start	1	21	26	31	36	41	46	51	56	61	66	71	76	81	86	
Time	20	25	30	35	40	45	50	55	60	65	70	75	80	85	9999	Total
06/20/19	1	0	0	1	1	6	9	7	2	0	0	0	0	0	0	27
01:00	1	0	0	2	2	4	2	1	4	1	0	0	0	0	0	17
02:00	2	0	0	0	0	0	1	6	4	0	0	0	0	0	0	13
03:00	0	0	0	0	3	0	6	11	2	1	0	0	0	0	0	23
04:00	1	0	0	0	3	9	15	8	4	0	0	0	0	0	0	40
05:00	2	0	0	0	1	11	11	29	8	0	0	0	0	0	0	62
06:00	7	0	1	0	13	33	45	45	8	0	0	0	0	0	0	152
07:00	2	2	0	0	11	45	50	45	9	1	0	0	0	0	0	165
08:00	7	0	3	13	17	38	54	29	8	1	0	0	0	0	0	170
09:00	1	1	0	1	15	35	71	32	6	0	0	0	0	0	0	162
10:00	2	0	0	8	9	32	61	30	11	0	0	0	0	0	0	153
11:00	3	2	2	4	12	32	51	40	11	2	0	0	0	0	0	159
12 PM	0	3	2	7	14	32	59	31	15	2	0	0	0	0	0	165
13:00	1	0	1	1	13	39	64	52	22	2	0	0	0	0	0	195
14:00	3	1	0	2	7	34	59	67	21	4	0	0	0	0	0	198
15:00	2	5	3	7	18	43	94	74	28	3	0	1	0	0	0	278
16:00	4	1	1	1	17	56	148	124	42	4	0	0	0	0	0	398
17:00	4	0	2	3	18	91	171	91	22	3	0	0	0	0	0	405
18:00	1	1	1	0	8	20	59	60	18	4	1	0	0	0	0	173
19:00	0	1	1	2	9	29	47	37	26	2	0	1	0	0	0	155
20:00	0	1	0	0	7	20	36	34	13	1	0	0	0	0	0	112
21:00	0	0	0	2	2	12	25	18	8	1	0	0	0	0	0	68
22:00	0	0	0	0	5	12	18	9	7	3	0	0	0	0	0	54
23:00	0	0	0	0	1	1	9	25	16	2	0	0	0	0	0	54
Total	44	18	17	54	206	634	1165	905	315	37	1	2	0	0	0	3398

Tri-State Traffic Data Inc

184 Baker Rd
Coatesville, PA 19320

Direction 2

Start Time	1 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 80	81 85	86 9999	Total
06/21/19	0	0	0	0	2	0	2	4	5	0	0	0	0	0	0	13
01:00	0	0	0	4	3	2	6	9	11	0	0	0	0	0	0	35
02:00	1	0	0	0	0	1	3	4	2	0	0	0	0	0	0	11
03:00	0	0	0	0	1	1	9	7	1	1	0	0	0	0	0	20
04:00	0	0	0	2	2	6	11	11	0	1	0	0	0	0	0	33
05:00	0	0	1	0	1	5	12	19	6	1	0	0	0	0	0	45
06:00	0	0	2	0	9	10	37	30	14	3	0	0	0	0	0	105
07:00	3	1	0	0	9	33	47	39	10	3	0	0	0	0	0	145
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	4	1	3	6	27	58	127	123	49	9	0	0	0	0	0	407
Grand Total	187	41	63	162	625	2111	4075	3194	1150	161	11	4	2	2	3	11791

Stats

15th Percentile :	41 MPH
50th Percentile :	48 MPH
85th Percentile :	54 MPH
95th Percentile :	58 MPH
Mean Speed(Average) :	48 MPH
10 MPH Pace Speed :	46-55 MPH
Number in Pace :	7269
Percent in Pace :	61.6%
Number of Vehicles > 55 MPH :	1333
Percent of Vehicles > 55 MPH :	11.3%

Tri-State Traffic Data Inc

184 Baker Rd
Coatesville, PA 19320

Road Name: NY 144 - River Rd
Segment: 110' N of Anders Lane
Ctr#: 36067

GPS: 42.602516, -73.769694

Start	17-Jun-19		Tue		Wed		Thu		Fri		Sat		Sun		Week Average	
Time	Northboun	Southbou	Northbou	Southbou	Northbou	Southbou	Northbou	Southbou	Northbou	Southbou	Northbou	Southbou	Northbou	Southbou	Northbou	Southbou
12:00 AM	*	*	31	30	21	24	28	27	23	13	*	*	*	*	26	24
01:00	*	*	19	16	8	17	12	17	7	35	*	*	*	*	12	21
02:00	*	*	12	17	10	16	14	12	18	11	*	*	*	*	14	14
03:00	*	*	29	32	24	24	16	23	10	20	*	*	*	*	20	25
04:00	*	*	28	41	38	51	26	40	39	33	*	*	*	*	33	41
05:00	*	*	103	81	96	71	93	61	70	45	*	*	*	*	90	64
06:00	*	*	211	155	185	171	184	151	**174**	**105**	*	*	*	*	188	146
07:00	*	*	**465**	171	**452**	154	**470**	165	*	*	*	*	*	*	**462**	163
08:00	*	*	365	**184**	355	164	340	**169**	*	*	*	*	*	*	353	**172**
09:00	*	*	212	173	173	170	207	162	*	*	*	*	*	*	197	168
10:00	*	*	177	169	156	159	182	152	*	*	*	*	*	*	172	160
11:00	*	*	179	164	166	**182**	170	159	*	*	*	*	*	*	172	168
12:00 PM	*	*	169	165	167	186	174	165	*	*	*	*	*	*	170	172
01:00	*	*	157	193	190	152	162	195	*	*	*	*	*	*	170	180
02:00	*	*	191	195	183	212	164	198	*	*	*	*	*	*	179	202
03:00	*	*	177	290	187	283	184	278	*	*	*	*	*	*	183	284
04:00	*	*	**194**	**386**	194	**402**	**208**	397	*	*	*	*	*	*	**199**	**395**
05:00	**202**	**370**	163	364	**199**	390	196	**405**	*	*	*	*	*	*	190	382
06:00	127	195	115	186	153	186	137	173	*	*	*	*	*	*	133	185
07:00	120	137	90	146	93	151	87	155	*	*	*	*	*	*	98	147
08:00	82	123	74	125	82	122	63	112	*	*	*	*	*	*	75	120
09:00	57	90	68	80	49	86	58	68	*	*	*	*	*	*	58	81
10:00	53	54	45	56	38	58	45	54	*	*	*	*	*	*	45	56
11:00	25	52	21	53	20	43	19	54	*	*	*	*	*	*	21	50
Lane	666	1021	3295	3472	3239	3474	3239	3392	341	262	0	0	0	0	3260	3420
Day	1687		6767		6713		6631		603		0		0		6680	
AM Peak	-	-	07:00	08:00	07:00	11:00	07:00	08:00	06:00	06:00	-	-	-	-	07:00	08:00
Vol.	-	-	465	184	452	182	470	169	174	105	-	-	-	-	462	172
PM Peak	17:00	17:00	16:00	16:00	17:00	16:00	16:00	17:00	-	-	-	-	-	-	16:00	16:00
Vol.	202	370	194	386	199	402	208	405	-	-	-	-	-	-	199	395

Comb. Total	1687		6767		6713		6631		603		0		0		6680	
ADT	ADT 6,676		AADT 6,676													

New York State Department of Transportation

Traffic Count Hourly Report

ROAD #: **RAMP** ROAD NAME: **I-787 INT 1**
DIRECTION: Northbound FACTOR GROUP: 30
STATE DIR CODE: 3 WK OF YR: 6
DATE OF COUNT: 02/01/2010
NOTES LANE 1: NORTH

COUNT TAKEN BY: ORG CODE: DOT INITIALS: DS

FROM: **US 9W**
REC. SERIAL #: 0254
PLACEMENT: I 787 NB ON RAMP
@ REF MARKER:
ADDL DATA:
COUNT TYPE: AXLE PAIRS
PROCESSED BY: ORG CODE: DOT INITIALS: MLA

TO: **I-787 NB (ON)**
FUNC. CLASS: 11
NHS: no
JURIS: NYSDOT
CC Stn:
BATCH ID: DOT-WW6

COUNTY: **Albany**
CITY: **ALBANY**
LION#:
BIN:
RR CROSSING:
HPMS SAMPLE:

DATE	DAY	12 TO 1 AM	1 TO 2 AM	2 TO 3 AM	3 TO 4 AM	4 TO 5 AM	5 TO 6 AM	6 TO 7 AM	7 TO 8 AM	8 TO 9 AM	9 TO 10 AM	10 TO 11 AM	11 TO 12 AM	12 TO 1 PM	1 TO 2 PM	2 TO 3 PM	3 TO 4 PM	4 TO 5 PM	5 TO 6 PM	6 TO 7 PM	7 TO 8 PM	8 TO 9 PM	9 TO 10 PM	10 TO 11 PM	11 TO 12 PM	DAILY TOTAL	DAILY HIGH COUNT	DAILY HIGH HOUR
1	M		**22**	**18**	**35**	**48**	**146**	**465**	**1185**	**1245**	**744**	**495**	**479**	**507**	**463**	**518**	**711**	**741**	**594**	**372**	**266**	**178**	**134**	**103**	**95**			
2	T	**29**	**28**	**24**	**36**	**55**	**134**	**506**	**1195**	**1289**	**833**	**482**	**524**	**528**	**485**	**487**	**709**	**757**	**587**	**367**	**273**	**226**	**176**	**109**	**93**	9932	1289	8
3	W																											
4	T																											
5	F																											
6	S																											
7	S																											
8	M																											
9	T																											
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11	T																											
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19	F																											
20	S																											
21	S																											
22	M																											
23	T																											
24	W																											
25	T																											
26	F																											
27	S																											
28	S																											

AVERAGE WEEKDAY HOURS (Axle Factored, Mon 6AM to Fri Noon)

12 TO 1 AM	1 TO 2 AM	2 TO 3 AM	3 TO 4 AM	4 TO 5 AM	5 TO 6 AM	6 TO 7 AM	7 TO 8 AM	8 TO 9 AM	9 TO 10 AM	10 TO 11 AM	11 TO 12 AM	12 TO 1 PM	1 TO 2 PM	2 TO 3 PM	3 TO 4 PM	4 TO 5 PM	5 TO 6 PM	6 TO 7 PM	7 TO 8 PM	8 TO 9 PM	9 TO 10 PM	10 TO 11 PM	11 TO 12 PM	ADT
26	**25**	**21**	**32**	**48**	**118**	**428**	**1048**	**1116**	**694**	**430**	**442**	**456**	**418**	**442**	**626**	**660**	**520**	**326**	**238**	**178**	**137**	**93**	**83**	**8605**

DAYS Counted	HOURS Counted	WEEKDAYS Counted	WEEKDAY Hours	AVERAGE WEEKDAY High Hour	AVERAGE WEEKDAY % of day	Axle Adj. Factor	Seasonal/Weekday Adjustment Factor
2	47	1	42	1116	13%	0.881	0.972

ESTIMATED

AADT

8853

New York State Department of Transportation

Traffic Count Hourly Report

ROUTE #: **US 9W** ROAD NAME:
DIRECTION: Northbound FACTOR GROUP: 30
STATE DIR CODE: 1 WK OF YR: 41
DATE OF COUNT: 10/06/2015
NOTES LANE 0: NB travel and passing lanes

COUNT TAKEN BY: ORG CODE: TST INITIALS: BEK

FROM: **END 9W/32 OLAP**
REC. SERIAL #: 4997
PLACEMENT: 45 yds S of Mount Hope Dr
@ REF MARKER:
ADDL DATA:
COUNT TYPE: AXLE PAIRS

PROCESSED BY: ORG CODE: DOT INITIALS: WW

TO: **ACC RT 787I NB**
FUNC. CLASS: 14
NHS: no
JURIS: City
CC Stn:
BATCH ID: DOT-R01R01S41aTST1195

COUNTY: **Albany**
CITY:
LION#:
BIN: 1007610
RR CROSSING:
HPMS SAMPLE:

DATE	DAY	12 TO 1 AM	1 TO 2 AM	2 TO 3 AM	3 TO 4 AM	4 TO 5 AM	5 TO 6 AM	6 TO 7 AM	7 TO 8 AM	8 TO 9 AM	9 TO 10 AM	10 TO 11 AM	11 TO 12 AM	12 TO 1 PM	1 TO 2 PM	2 TO 3 PM	3 TO 4 PM	4 TO 5 PM	5 TO 6 PM	6 TO 7 PM	7 TO 8 PM	8 TO 9 PM	9 TO 10 PM	10 TO 11 PM	11 TO 12 PM	DAILY TOTAL	DAILY HIGH COUNT	DAILY HIGH HOUR
1	T																											
2	F																											
3	S																											
4	S																											
5	M																											
6	T											**664**	**782**	**855**	**872**	**1002**	**1256**	**1388**	**1499**	**1072**	**648**	**559**	**410**	**290**	**215**			
7	W	**84**	**73**	**82**	**77**	**132**	**334**	**775**	**926**	**926**	**744**	**670**	**805**	**867**	**856**	**946**	**1232**	**1393**	**1441**	**1028**	**759**	**594**	**400**	**264**	**193**	15601	1441	17
8	T	**102**	**69**	**74**	**82**	**134**	**337**	**765**	**916**	**882**	**768**	**777**	**772**	**854**	**834**	**948**	**1199**	**1390**	**1471**	**1025**	**769**	**674**	**438**	**296**	**171**	15747	1471	17
9	F	**95**	**78**	**78**	**68**	**154**	**324**	**716**	**844**	**900**	**726**	**793**	**762**	**899**	**867**	**1011**	**1178**	**1234**	**1394**	**857**	**611**	**476**	**449**	**369**	**244**	15127	1394	17
10	S	**175**	**74**	**64**	**76**	**73**	**153**	**323**	**336**	**514**	**574**	**704**	**828**	**827**	**766**	**837**	**775**	**745**	**804**	**721**	**567**	**530**	**431**	**339**	**224**	11460	837	14
11	S	**160**	**103**	**71**	**62**	**46**	**100**	**188**	**248**	**307**	**534**	**604**	**715**	**760**	**761**	**758**	**771**	**774**	**674**	**662**	**562**	**410**	**308**	**292**	**145**	10015	774	16
12	M	**77**	**74**	**68**	**80**	**116**	**286**	**644**	**673**	**748**	**661**	**715**	**802**	**880**	**850**	**973**	**1007**	**1094**	**1079**	**848**	**616**	**428**	**339**	**255**	**175**	13488	1094	16
13	T	**78**	**76**	**56**	**87**	**126**	**347**	**742**	**924**	**930**																		
14	W																											
15	T																											
16	F																											
17	S																											
18	S																											
19	M																											
20	T																											
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26	M																											
27	T																											
28	W																											
29	T																											
30	F																											
31	S																											

AVERAGE WEEKDAY HOURS (Axle Factored, Mon 6AM to Fri Noon)

12 TO 1 AM	1 TO 2 AM	2 TO 3 AM	3 TO 4 AM	4 TO 5 AM	5 TO 6 AM	6 TO 7 AM	7 TO 8 AM	8 TO 9 AM	9 TO 10 AM	10 TO 11 AM	11 TO 12 AM	12 TO 1 PM	1 TO 2 PM	2 TO 3 PM	3 TO 4 PM	4 TO 5 PM	5 TO 6 PM	6 TO 7 PM	7 TO 8 PM	8 TO 9 PM	9 TO 10 PM	10 TO 11 PM	11 TO 12 PM	ADT
87	**72**	**70**	**76**	**132**	**326**	**707**	**832**	**852**	**704**	**703**	**762**	**839**	**828**	**939**	**1140**	**1278**	**1332**	**964**	**678**	**548**	**385**	**268**	**183**	**14705**

DAYS Counted	HOURS Counted	WEEKDAYS Counted	WEEKDAY Hours	AVERAGE WEEKDAY High Hour	AVERAGE WEEKDAY % of day	Axle Adj. Factor	Seasonal/Weekday Adjustment Factor
7	167	4	101	1332	9%	0.971	1.056

ESTIMATED (one way)

AADT

13925

New York State Department of Transportation

Traffic Count Hourly Report

ROUTE #: **US 9W** ROAD NAME:
DIRECTION: Southbound FACTOR GROUP: 30
STATE DIR CODE: 2 WK OF YR: 41
DATE OF COUNT: 10/06/2015
NOTES LANE 0: SB travel and passing lanes

COUNT TAKEN BY: ORG CODE: TST INITIALS: BEK

FROM: **END 9W/32 OLAP**
REC. SERIAL #: 2574
PLACEMENT: 45 Yds S of Mount Hope Dr
@ REF MARKER:
ADDL DATA:
COUNT TYPE: AXLE PAIRS

PROCESSED BY: ORG CODE: DOT INITIALS: WW

TO: **ACC RT 787I NB**
FUNC. CLASS: 14
NHS: no
JURIS: City
CC Stn:
BATCH ID: DOT-R01R01S41aTST1195

COUNTY: **Albany**
CITY:
LION#:
BIN: 1007610
RR CROSSING:
HPMS SAMPLE:

DATE	DAY	12 TO 1 AM	1 TO 2 AM	2 TO 3 AM	3 TO 4 AM	4 TO 5 AM	5 TO 6 AM	6 TO 7 AM	7 TO 8 AM	8 TO 9 AM	9 TO 10 AM	10 TO 11 AM	11 TO 12 AM	12 TO 1 PM	1 TO 2 PM	2 TO 3 PM	3 TO 4 PM	4 TO 5 PM	5 TO 6 PM	6 TO 7 PM	7 TO 8 PM	8 TO 9 PM	9 TO 10 PM	10 TO 11 PM	11 TO 12 PM	DAILY TOTAL	DAILY HIGH COUNT	DAILY HIGH HOUR
1	T																											
2	F																											
3	S																											
4	S																											
5	M																											
6	T											**899**	**909**	**1034**	**1002**	**1073**	**1334**	**1402**	**1140**	**930**	**651**	**457**	**310**	**190**	**204**			
7	W	**89**	**52**	**80**	**90**	**154**	**344**	**1016**	**1993**	**1754**	**1273**	**1016**	**903**	**1018**	**996**	**993**	**1407**	**1308**	**1130**	**952**	**612**	**470**	**339**	**209**	**212**	18410	1993	7
8	T	**98**	**66**	**72**	**94**	**144**	**375**	**1029**	**1952**	**1799**	**1235**	**992**	**987**	**1036**	**1049**	**1013**	**1338**	**1377**	**1162**	**998**	**663**	**523**	**322**	**230**	**215**	18769	1952	7
9	F	**63**	**78**	**64**	**110**	**119**	**366**	**911**	**1801**	**1666**	**1241**	**1000**	**1038**	**1090**	**1028**	**1171**	**1354**	**1228**	**1099**	**958**	**636**	**449**	**359**	**284**	**223**	18336	1801	7
10	S	**116**	**84**	**52**	**60**	**110**	**138**	**355**	**483**	**571**	**897**	**968**	**1029**	**1034**	**1021**	**929**	**949**	**813**	**843**	**837**	**607**	**384**	**314**	**279**	**216**	13089	1034	12
11	S	**102**	**80**	**47**	**40**	**50**	**89**	**211**	**315**	**503**	**683**	**807**	**942**	**1029**	**967**	**885**	**824**	**709**	**620**	**622**	**553**	**343**	**234**	**193**	**155**	11003	1029	12
12	M	**76**	**70**	**57**	**86**	**118**	**281**	**653**	**1068**	**962**	**931**	**1051**	**1006**	**1068**	**1036**	**1034**	**1237**	**1253**	**1054**	**802**	**591**	**405**	**275**	**219**	**192**	15525	1253	16
13	T	**81**	**69**	**48**	**83**	**149**	**357**	**991**	**1875**	**1821**																		
14	W																											
15	T																											
16	F																											
17	S																											
18	S																											
19	M																											
20	T																											
21	W																											
22	T																											
23	F																											
24	S																											
25	S																											
26	M																											
27	T																											
28	W																											
29	T																											
30	F																											
31	S																											

AVERAGE WEEKDAY HOURS (Axle Factored, Mon 6AM to Fri Noon)

																								ADT
81	**64**	**64**	**91**	**138**	**350**	**893**	**1688**	**1554**	**1136**	**963**	**941**	**1009**	**991**	**998**	**1290**	**1296**	**1089**	**893**	**611**	**451**	**303**	**206**	**200**	**17300**

DAYS Counted	HOURS Counted	WEEKDAYS Counted	WEEKDAY Hours	AVERAGE WEEKDAY High Hour	AVERAGE WEEKDAY % of day	Axle Adj. Factor	Seasonal/Weekday Adjustment Factor
7	167	4	101	1688	10%	0.971	1.056

ESTIMATED (one way)

AADT
16383

STATION: 110902

New York State Department of Transportation
Roadway Traffic Count Hourly Report

ROUTE/ROAD:	910A Glenmont Rd	FROM:	RT 9W JCT	TO:	RT 144	REGION-COUNTY:	1-ALBANY
FED DIR CODE:	3, 7	REF. MARKER:	910A11011027	FUNC. CLASS:	16 - U Minor Arterial	MUNI:	Bethlehem-Town-0071
ST DIR CODE:	6	END MILEPOST:	4.03	FACTOR GROUP:	30	BIN:	1022440
DOT ID:	100564	LANES BY DIR:	1 East 1 West	CC STN:		RR CROSSING:	
BEGIN DATE:	5/6/2014	WEEK OF YEAR:	18	ADDL DATA:	CLS SPD	HPMS SAMPLE:	6931009
NOTES 1:	EB travel lane	PLACEMENT:	60' W of Glenmont Ct î	JURISDICTION:	01-NYSDOT	1 WAY CODE:	
NOTES 2:	WB travel lane					COUNT TYPE:	Vehicle
TAKEN BY:	TST-BEK	PROCESSED BY:	DOT-JLB	BATCH ID:	DOT-R1WW19B C	SPEED LIMIT:	40

DATE	00-01	01-02	02-03	03-04	04-05	05-06	06-07	07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY TOTAL	HIGH COUNT	HIGH HOUR
5/06, Tue															**384**	**446**	**556**	**589**	**452**	**336**	**237**	**128**	**54**	**50**	3232		
5/07, Wed	**9**	**8**	**6**	**7**	**27**	**70**	**164**	**304**	**352**	**309**	**314**	**352**	**401**	**413**	**368**	**474**	**576**	**605**	**468**	**338**	**276**	**157**	**72**	**40**	6110	605	17-18
5/08, Thu	**25**	**8**	**5**	**5**	**17**	**62**	**149**	**316**	**356**	**325**	**294**	**382**	**456**	**390**	**392**	**510**	**605**	**603**	**482**	**419**	**257**	**139**	**72**	**40**	6309	605	16-17
5/09, Fri	**18**	**21**	**16**	**14**	**18**	**66**	**165**	**319**	**401**	**351**	**385**	**439**	**458**	**445**	**454**	**557**	**639**	**653**	**515**	**337**	**222**	**124**	**68**	**54**	6739	653	17-18
5/10, Sat	**27**	**9**	**7**	**4**	**11**	**22**	**56**	**121**	**251**	**384**	**506**	**596**	**600**	**556**	**540**	**480**	**432**	**442**	**394**	**326**	**210**	**128**	**80**	**48**	6230	600	12-13
5/11, Sun	**31**	**14**	**7**	**13**	**5**	**10**	**51**	**124**	**169**	**346**	**410**	**468**	**518**	**509**	**457**	**393**	**380**	**330**	**339**	**238**	**185**	**86**	**42**	**21**	5146	518	12-13
5/12, Mon	**6**	**13**	**1**	**11**	**24**	**71**	**153**	**339**	**379**	**307**	**324**														1628		
AVERAGE WEEKDAY HOURS (Axle Factored, Mon 6 AM to Fri Noon)																									**AWDT**		
	17	**12**	**9**	**9**	**21**	**66**	**158**	**320**	**372**	**323**	**329**	**391**	**429**	**402**	**381**	**477**	**579**	**599**	**467**	**364**	**257**	**141**	**66**	**43**	6231		

DAYS Counted	HOURS Counted	WEEKDAYS Counted	WEEKDAY Hours	AVERAGE WEEKDAY Roadway High Hour	Roadway % of day	East High Hour	East % of day	West High Hour	West % of day
6	141	3	75	599	9.6	210	8.8	427	11.1

ESTIMATED AADT		
Roadway	East	West
5783	2172	3518

FACTOR

Month	Seasonal	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Axl
5	1.08	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

STATION: 110902

New York State Department of Transportation
EB Traffic Count Hourly Report

ROUTE/ROAD:	910A Glenmont Rd	FROM:	RT 9W JCT	TO:	RT 144	REGION-COUNTY:	1-ALBANY
FED DIR CODE:	3	REF. MARKER:	910A11011027	FUNC. CLASS:	16 - U Minor Arterial	MUNI:	Bethlehem-Town-0071
ST DIR CODE:	6	END MILEPOST:	4.03	FACTOR GROUP:	30	BIN:	1022440
DOT ID:	100564	LANES BY DIR:	1 East	CC STN:		RR CROSSING:	
BEGIN DATE:	5/6/2014	WEEK OF YEAR:	18	ADDL DATA:	CLS SPD	HPMS SAMPLE:	6931009
NOTES 1:	EB travel lane	PLACEMENT:	60' W of Glenmont Ct î	JURISDICTION:	01-NYSDOT	1 WAY CODE:	
NOTES 2:	WB travel lane					COUNT TYPE:	Vehicle
TAKEN BY:	TST-BEK	PROCESSED BY:	DOT-JLB	BATCH ID:	DOT-R1WW19B C	SPEED LIMIT:	40

DATE	00-01	01-02	02-03	03-04	04-05	05-06	06-07	07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY TOTAL	HIGH COUNT	HIGH HOUR
5/06, Tue															**135**	**146**	**199**	**175**	**153**	**112**	**97**	**50**	**21**	**27**	1115		
5/07, Wed	**3**	**1**	**3**	**4**	**16**	**36**	**74**	**160**	**204**	**145**	**115**	**130**	**151**	**148**	**123**	**168**	**200**	**171**	**163**	**128**	**124**	**67**	**20**	**12**	2366	204	08-09
5/08, Thu	**8**	**5**	**2**	**1**	**12**	**35**	**66**	**173**	**203**	**136**	**121**	**134**	**173**	**148**	**131**	**181**	**186**	**169**	**166**	**145**	**100**	**61**	**28**	**14**	2398	203	08-09
5/09, Fri	**9**	**11**	**8**	**4**	**11**	**32**	**82**	**164**	**222**	**154**	**168**	**160**	**173**	**153**	**167**	**196**	**186**	**195**	**185**	**130**	**76**	**44**	**25**	**22**	2577	222	08-09
5/10, Sat	**11**	**3**	**1**	**1**	**3**	**11**	**28**	**57**	**123**	**156**	**197**	**234**	**247**	**211**	**170**	**180**	**157**	**154**	**125**	**107**	**74**	**53**	**31**	**19**	2353	247	12-13
5/11, Sun	**14**	**4**	**4**	**3**	**1**	**4**	**22**	**55**	**64**	**150**	**144**	**165**	**207**	**179**	**162**	**138**	**155**	**109**	**130**	**89**	**71**	**37**	**19**	**10**	1936	207	12-13
5/12, Mon	**4**	**6**	**0**	**6**	**16**	**35**	**76**	**181**	**209**	**120**	**123**														776		
AVERAGE WEEKDAY HOURS (Axle Factored, Mon 6 AM to Fri Noon)																									**AWDT**		
	7	**6**	**4**	**3**	**13**	**34**	**75**	**170**	**210**	**139**	**132**	**141**	**162**	**148**	**130**	**165**	**195**	**172**	**161**	**128**	**107**	**59**	**23**	**18**	2400		

DAYS Counted	HOURS Counted	WEEKDAYS Counted	WEEKDAY Hours	AVERAGE WEEKDAY Roadway High Hour	Roadway % of day	East High Hour	East % of day	West High Hour	West % of day	ESTIMATED AADT Roadway	East	West
6	141	3	75	599	9.6	210	8.8	427	11.1	5783	2172	3518

FACTOR

Month	Seasonal	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Axl
5	1.08	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

STATION: 110902

New York State Department of Transportation
WB Traffic Count Hourly Report

ROUTE/ROAD:	910A Glenmont Rd	FROM:	RT 9W JCT	TO:	RT 144	REGION-COUNTY:	1-ALBANY
FED DIR CODE:	7	REF. MARKER:	910A11011027	FUNC. CLASS:	16 - U Minor Arterial	MUNI:	Bethlehem-Town-0071
ST DIR CODE:	6	END MILEPOST:	4.03	FACTOR GROUP:	30	BIN:	1022440
DOT ID:	100564	LANES BY DIR:	1 West	CC STN:		RR CROSSING:	
BEGIN DATE:	5/6/2014	WEEK OF YEAR:	18	ADDL DATA:	CLS SPD	HPMS SAMPLE:	6931009
NOTES 1:	EB travel lane	PLACEMENT:	60' W of Glenmont Ct î	JURISDICTION:	01-NYSDOT	1 WAY CODE:	
NOTES 2:	WB travel lane					COUNT TYPE:	Vehicle
TAKEN BY:	TST-BEK	PROCESSED BY:	DOT-JLB	BATCH ID:	DOT-R1WW19B C	SPEED LIMIT:	40

DATE	00-01	01-02	02-03	03-04	04-05	05-06	06-07	07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY TOTAL	HIGH COUNT	HIGH HOUR
5/06, Tue															**249**	**300**	**357**	**414**	**299**	**224**	**140**	**78**	**33**	**23**	2117		
5/07, Wed	**6**	**7**	**3**	**3**	**11**	**34**	**90**	**144**	**148**	**164**	**199**	**222**	**250**	**265**	**245**	**306**	**376**	**434**	**305**	**210**	**152**	**90**	**52**	**28**	3744	434	17-18
5/08, Thu	**17**	**3**	**3**	**4**	**5**	**27**	**83**	**143**	**153**	**189**	**173**	**248**	**283**	**242**	**261**	**329**	**419**	**434**	**316**	**274**	**157**	**78**	**44**	**26**	3911	434	17-18
5/09, Fri	**9**	**10**	**8**	**10**	**7**	**34**	**83**	**155**	**179**	**197**	**217**	**279**	**285**	**292**	**287**	**361**	**453**	**458**	**330**	**207**	**146**	**80**	**43**	**32**	4162	458	17-18
5/10, Sat	**16**	**6**	**6**	**3**	**8**	**11**	**28**	**64**	**128**	**228**	**309**	**362**	**353**	**345**	**370**	**300**	**275**	**288**	**269**	**219**	**136**	**75**	**49**	**29**	3877	370	14-15
5/11, Sun	**17**	**10**	**3**	**10**	**4**	**6**	**29**	**69**	**105**	**196**	**266**	**303**	**311**	**330**	**295**	**255**	**225**	**221**	**209**	**149**	**114**	**49**	**23**	**11**	3210	330	13-14
5/12, Mon	**2**	**7**	**1**	**5**	**8**	**36**	**77**	**158**	**170**	**187**	**201**														852		
AVERAGE WEEKDAY HOURS (Axle Factored, Mon 6 AM to Fri Noon)																									**AWDT**		
	11	**7**	**5**	**6**	**8**	**32**	**83**	**150**	**163**	**184**	**198**	**250**	**267**	**254**	**252**	**312**	**384**	**427**	**307**	**236**	**150**	**82**	**43**	**26**	3832		

DAYS Counted	HOURS Counted	WEEKDAYS Counted	WEEKDAY Hours	AVERAGE WEEKDAY Roadway High Hour	Roadway % of day	East High Hour	East % of day	West High Hour	West % of day
6	141	3	75	599	9.6	210	8.8	427	11.1

ESTIMATED AADT Roadway	East	West
5783	2172	3518

FACTOR

Month	Seasonal	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Axl
5	1.08	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

STATION: 113276

New York State Department of Transportation
Roadway Traffic Count Hourly Report

ROUTE/ROAD:	A I787 EB to 9W	FROM:	I-787 NB/ I-87 EX23 (OFF)	TO:	US 9W	REGION-COUNTY:	1-ALBANY
FED DIR CODE:	3	REF. MARKER:		FUNC. CLASS:	11 - U Principal Arterial - Interstate	MUNI:	Albany-City-2001
ST DIR CODE:	3	END MILEPOST:	.1	FACTOR GROUP:	30	BIN:	
DOT ID:	272801	LANES BY DIR:	2 East 0 West	CC STN:		RR CROSSING:	
BEGIN DATE:	5/1/2014	WEEK OF YEAR:	18	ADDL DATA:		HPMS SAMPLE:	
NOTES 1:	EB travel and passing lanes	PLACEMENT:	50' W of SR 9W î	JURISDICTION:	01-NYSDOT	1 WAY CODE:	Y
NOTES 2:						COUNT TYPE:	Axle
TAKEN BY:	TST-BEK	PROCESSED BY:	R01-TDB	BATCH ID:	DOT-R01R1 WW1	SPEED LIMIT:	

DATE	00-01	01-02	02-03	03-04	04-05	05-06	06-07	07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY TOTAL	HIGH COUNT	HIGH HOUR
5/01, Thu										**894**	**681**	**597**	**717**	**714**	**802**	**930**	**908**	**1098**	**750**	**518**	**449**	**349**	**277**	**158**	9842		
5/02, Fri	**164**	**88**	**101**	**125**	**165**	**257**	**989**	**1700**	**1448**	**862**	**685**	**689**	**729**	**613**	**820**	**919**	**1018**	**1012**	**739**	**538**	**441**	**412**	**338**	**246**	15098	1700	07-08
5/03, Sat	**135**	**116**	**110**	**108**	**127**	**119**	**291**	**230**	**350**	**371**	**467**	**533**	**598**	**553**	**665**	**675**	**603**	**499**	**541**	**414**	**463**	**362**	**333**	**239**	8902	675	15-16
5/04, Sun	**123**	**104**	**44**	**63**	**47**	**64**	**253**	**170**	**217**	**435**	**357**	**447**	**649**	**635**	**636**	**691**	**593**	**647**	**673**	**438**	**448**	**317**	**172**	**116**	8339	691	15-16
5/05, Mon	**70**	**34**	**34**	**26**	**111**	**240**	**1015**	**1702**	**1544**	**883**	**695**	**593**	**723**	**643**	**719**	**886**	**901**	**975**	**702**	**430**	**331**	**252**	**225**	**170**	13904	1702	07-08
5/06, Tue	**75**	**76**	**115**	**105**	**135**	**278**	**1002**	**1833**	**1509**	**739**	**696**	**568**	**623**	**622**	**784**	**768**	**896**	**1075**	**721**	**391**	**341**	**343**	**255**	**143**	14093	1833	07-08
5/07, Wed	**96**	**64**	**76**	**93**	**186**	**279**	**1085**	**1761**	**1489**	**960**	**646**	**670**													7405		
AVERAGE WEEKDAY HOURS (Axle Factored, Mon 6 AM to Fri Noon)																									**AWDT**		
	101	**69**	**88**	**97**	**146**	**245**	**925**	**1581**	**1354**	**784**	**615**	**564**	**622**	**596**	**695**	**779**	**815**	**949**	**655**	**403**	**338**	**284**	**228**	**142**	13075		

DAYS Counted	HOURS Counted	WEEKDAYS Counted	WEEKDAY Hours	AVERAGE WEEKDAY Roadway High Hour	Roadway % of day	East High Hour	East % of day	West High Hour	West % of day
6	147	3	81	1581	12.1				

ESTIMATED AADT Roadway	East	West
10579		

FACTOR

Month	Seasonal	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Axl
5	1.08	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90

New York State Department of Transportation

Traffic Count Hourly Report

ROAD #: **RAMP** ROAD NAME: **I-787 INT 1**
DIRECTION: Southbound FACTOR GROUP: 30
STATE DIR CODE: 3 WK OF YR: 6
DATE OF COUNT: 02/01/2010
NOTES LANE 1: SOUTH

COUNT TAKEN BY: ORG CODE: DOT INITIALS: DS

FROM: **US 9W**
REC. SERIAL #: 1165
PLACEMENT: I 787 SB ON RAMP
@ REF MARKER:
ADDL DATA:
COUNT TYPE: AXLE PAIRS

PROCESSED BY: ORG CODE: DOT INITIALS: MLA

TO: **I-787 NB/ I-87 EX23 (ON)**
FUNC. CLASS: 11
NHS: no
JURIS: NYSDOT
CC Stn:
BATCH ID: DOT-WW6

COUNTY: **Albany**
CITY: **ALBANY**
LION#:
BIN:
RR CROSSING:
HPMS SAMPLE:

DATE	DAY	12 TO 1 AM	1 TO 2 AM	2 TO 3 AM	3 TO 4 AM	4 TO 5 AM	5 TO 6 AM	6 TO 7 AM	7 TO 8 AM	8 TO 9 AM	9 TO 10 AM	10 TO 11 AM	11 TO 12 AM	12 TO 1 PM	1 TO 2 PM	2 TO 3 PM	3 TO 4 PM	4 TO 5 PM	5 TO 6 PM	6 TO 7 PM	7 TO 8 PM	8 TO 9 PM	9 TO 10 PM	10 TO 11 PM	11 TO 12 PM	DAILY TOTAL	DAILY HIGH COUNT	DAILY HIGH HOUR
1	M		**46**	**52**	**77**	**57**	**122**	**324**	**625**	**629**	**397**	**398**	**390**	**379**	**382**	**468**	**768**	**1056**	**772**	**357**	**231**	**210**	**138**	**105**	**99**			
2	T	**55**	**60**	**71**	**55**	**87**	**162**	**324**	**637**	**569**	**413**	**362**	**421**	**362**	**404**	**438**	**746**	**1003**	**793**	**347**	**250**	**238**	**185**	**104**	**129**	8215	1003	16
3	W																											
4	T																											
5	F																											
6	S																											
7	S																											
8	M																											
9	T																											
10	W																											
11	T																											
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16	T																											
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21	S																											
22	M																											
23	T																											
24	W																											
25	T																											
26	F																											
27	S																											
28	S																											

AVERAGE WEEKDAY HOURS (Axle Factored, Mon 6AM to Fri Noon)

																									ADT
48	**53**	**63**	**48**	**77**	**143**	**285**	**556**	**528**	**357**	**335**	**358**	**326**	**346**	**399**	**667**	**907**	**689**	**310**	**211**	**197**	**143**	**92**	**100**	**7238**

DAYS Counted	HOURS Counted	WEEKDAYS Counted	WEEKDAY Hours	AVERAGE WEEKDAY High Hour	AVERAGE WEEKDAY % of day	Axle Adj. Factor	Seasonal/Weekday Adjustment Factor
2	47	1	42	907	13%	0.881	0.972

ESTIMATED

AADT
7447

New York State Department of Transportation

Traffic Count Hourly Report

ROUTE #: **NY 32** ROAD NAME: **Corning Hill Rd**
DIRECTION: Northbound FACTOR GROUP: 30
STATE DIR CODE: 6 WK OF YR: 15
DATE OF COUNT: 04/06/2015
NOTES LANE 1: NB travel lane

COUNT TAKEN BY: ORG CODE: TST INITIALS: BEK

FROM: **END 9W/32 OLAP** TO: **RT 144 JCT**
REC. SERIAL #: DR74 FUNC. CLASS: 16
PLACEMENT: 277 Yd W of Retreat House Rd NHS: no
@ REF MARKER: JURIS: City
ADDL DATA: CC Stn:
COUNT TYPE: AXLE PAIRS BATCH ID: DOT-R01 WW15a Vol
PROCESSED BY: ORG CODE: DOT INITIALS: dc

COUNTY: **Albany**
TOWN: **BETHLEHEM**
LION#:
BIN:
RR CROSSING:
HPMS SAMPLE:

DATE	DAY	12 TO 1 AM	1 TO 2 AM	2 TO 3 AM	3 TO 4 AM	4 TO 5 AM	5 TO 6 AM	6 TO 7 AM	7 TO 8 AM	8 TO 9 AM	9 TO 10 AM	10 TO 11 AM	11 TO 12 AM	12 TO 1 PM	1 TO 2 PM	2 TO 3 PM	3 TO 4 PM	4 TO 5 PM	5 TO 6 PM	6 TO 7 PM	7 TO 8 PM	8 TO 9 PM	9 TO 10 PM	10 TO 11 PM	11 TO 12 PM	DAILY TOTAL	DAILY HIGH COUNT	DAILY HIGH HOUR
1	W																											
2	T																											
3	F																											
4	S																											
5	S																											
6	M								**118**	**104**	**77**	**72**	**85**	**90**	**106**	**98**	**89**	**99**	**92**	**42**	**40**	**34**	**29**	**13**	**11**			
7	T	**7**	**7**	**4**	**15**	**23**	**44**	**71**	**110**	**118**	**86**	**81**	**87**	**107**	**113**	**85**	**69**	**92**	**78**	**70**	**38**	**35**	**22**	**19**	**16**	1397	118	8
8	W	**5**	**8**	**8**	**9**	**16**	**44**	**77**	**103**	**106**	**84**	**79**	**75**	**96**	**106**	**80**	**82**	**87**	**86**	**53**	**44**	**30**	**30**	**22**	**8**	1338	106	8
9	T	**10**	**7**	**11**	**11**	**18**	**44**	**74**																				
10	F																											
11	S																											
12	S																											
13	M																											
14	T																											
15	W																											
16	T																											
17	F																											
18	S																											
19	S																											
20	M																											
21	T																											
22	W																											
23	T																											
24	F																											
25	S																											
26	S																											
27	M																											
28	T																											
29	W																											
30	T																											

AVERAGE WEEKDAY HOURS (Axle Factored, Mon 6AM to Fri Noon)

12 TO 1 AM	1 TO 2 AM	2 TO 3 AM	3 TO 4 AM	4 TO 5 AM	5 TO 6 AM	6 TO 7 AM	7 TO 8 AM	8 TO 9 AM	9 TO 10 AM	10 TO 11 AM	11 TO 12 AM	12 TO 1 PM	1 TO 2 PM	2 TO 3 PM	3 TO 4 PM	4 TO 5 PM	5 TO 6 PM	6 TO 7 PM	7 TO 8 PM	8 TO 9 PM	9 TO 10 PM	10 TO 11 PM	11 TO 12 PM	ADT
7	**7**	**8**	**12**	**19**	**44**	**74**	**110**	**109**	**82**	**77**	**82**	**98**	**108**	**88**	**80**	**93**	**85**	**55**	**41**	**33**	**27**	**18**	**12**	**1369**

DAYS Counted	HOURS Counted	WEEKDAYS Counted	WEEKDAY Hours	AVERAGE WEEKDAY High Hour	AVERAGE WEEKDAY % of day	Axle Adj. Factor	Seasonal/Weekday Adjustment Factor
4	72	4	72	110	8%	1.000	1.052

ESTIMATED

AADT

1301

New York State Department of Transportation

Traffic Count Hourly Report

ROUTE #: **NY 32** ROAD NAME: **Corning Hill Rd**
DIRECTION: Southbound FACTOR GROUP: 30
STATE DIR CODE: 7 WK OF YR: 15
DATE OF COUNT: 04/06/2015
NOTES LANE 1: SB travel lane

COUNT TAKEN BY: ORG CODE: TST INITIALS: BEK

FROM: **END 9W/32 OLAP** TO: **RT 144 JCT**
REC. SERIAL #: DR74 FUNC. CLASS: 16
PLACEMENT: 277 Yd W of Retreat House Rd NHS: no
@ REF MARKER: JURIS: City
ADDL DATA: CC Stn:
COUNT TYPE: AXLE PAIRS BATCH ID: DOT-R01 WW15a Vol

PROCESSED BY: ORG CODE: DOT INITIALS: dc

COUNTY: **Albany**
TOWN: **BETHLEHEM**
LION#:
BIN:
RR CROSSING:
HPMS SAMPLE:

DATE	DAY	12 TO 1 AM	1 TO 2 AM	2 TO 3 AM	3 TO 4 AM	4 TO 5 AM	5 TO 6 AM	6 TO 7 AM	7 TO 8 AM	8 TO 9 AM	9 TO 10 AM	10 TO 11 AM	11 TO 12 AM	12 TO 1 PM	1 TO 2 PM	2 TO 3 PM	3 TO 4 PM	4 TO 5 PM	5 TO 6 PM	6 TO 7 PM	7 TO 8 PM	8 TO 9 PM	9 TO 10 PM	10 TO 11 PM	11 TO 12 PM	DAILY TOTAL	DAILY HIGH COUNT	DAILY HIGH HOUR
1	W																											
2	T																											
3	F																											
4	S																											
5	S																											
6	M								122	111	114	100	135	146	138	145	171	254	226	118	55	40	35	37	23			
7	T	8	16	14	25	16	38	59	106	126	127	122	124	160	151	147	201	259	256	107	81	54	47	31	29	2304	259	16
8	W	9	7	15	21	17	23	60	116	98	118	113	132	145	131	162	207	245	245	105	82	61	42	31	18	2203	245	16
9	T	13	16	12	12	12	30	67																				
10	F																											
11	S																											
12	S																											
13	M																											
14	T																											
15	W																											
16	T																											
17	F																											
18	S																											
19	S																											
20	M																											
21	T																											
22	W																											
23	T																											
24	F																											
25	S																											
26	S																											
27	M																											
28	T																											
29	W																											
30	T																											

AVERAGE WEEKDAY HOURS (Axle Factored, Mon 6AM to Fri Noon)

12 TO 1 AM	1 TO 2 AM	2 TO 3 AM	3 TO 4 AM	4 TO 5 AM	5 TO 6 AM	6 TO 7 AM	7 TO 8 AM	8 TO 9 AM	9 TO 10 AM	10 TO 11 AM	11 TO 12 AM	12 TO 1 PM	1 TO 2 PM	2 TO 3 PM	3 TO 4 PM	4 TO 5 PM	5 TO 6 PM	6 TO 7 PM	7 TO 8 PM	8 TO 9 PM	9 TO 10 PM	10 TO 11 PM	11 TO 12 PM	ADT
10	**13**	**14**	**19**	**15**	**30**	**62**	**115**	**112**	**120**	**112**	**130**	**150**	**140**	**151**	**193**	**253**	**242**	**110**	**73**	**52**	**41**	**33**	**23**	**2213**

DAYS Counted	HOURS Counted	WEEKDAYS Counted	WEEKDAY Hours	AVERAGE WEEKDAY High Hour	AVERAGE WEEKDAY % of day	Axle Adj. Factor	Seasonal/Weekday Adjustment Factor
4	72	4	72	253	11%	1.000	1.052

ESTIMATED

AADT
2104

New York State Department of Transportation

Traffic Count Hourly Report

ROUTE #: **913H** ROAD NAME: **US9W/NY32 JCT** FROM: **JCT RTS 9W & 32 SOUTHERN RAM** TO: **END AT RT 32** COUNTY: **Albany**

DIRECTION: Eastbound FACTOR GROUP: 30 REC. SERIAL #: FY23 FUNC. CLASS: 16 TOWN: **BETHLEHEM**

STATE DIR CODE: 3 WK OF YR: 15 PLACEMENT: 80 Yds E of SR 9W NHS: no LION#:

DATE OF COUNT: 04/06/2015 @ REF MARKER: JURIS: City BIN:

NOTES LANE 1: EB travel lane ADDL DATA: CC Stn: RR CROSSING:

COUNT TYPE: AXLE PAIRS BATCH ID: DOT-R01 WW15a Vol HPMS SAMPLE:

COUNT TAKEN BY: ORG CODE: TST INITIALS: BEK PROCESSED BY: ORG CODE: DOT INITIALS: dc

DATE	DAY	12 TO 1 AM	1 TO 2 AM	2 TO 3 AM	3 TO 4 AM	4 TO 5 AM	5 TO 6 AM	6 TO 7 AM	7 TO 8 AM	8 TO 9 AM	9 TO 10 AM	10 TO 11 AM	11 TO 12 AM	12 TO 1 PM	1 TO 2 PM	2 TO 3 PM	3 TO 4 PM	4 TO 5 PM	5 TO 6 PM	6 TO 7 PM	7 TO 8 PM	8 TO 9 PM	9 TO 10 PM	10 TO 11 PM	11 TO 12 PM	DAILY TOTAL	DAILY HIGH COUNT	DAILY HIGH HOUR
1	W																											
2	T																											
3	F																											
4	S																											
5	S																											
6	M								**163**	**187**	**112**	**113**	**117**	**138**	**150**	**120**	**112**	**97**	**100**	**70**	**61**	**39**	**40**	**19**	**20**			
7	T	**5**	**4**	**7**	**9**	**25**	**53**	**105**	**170**	**172**	**120**	**103**	**110**	**126**	**140**	**117**	**86**	**81**	**82**	**95**	**48**	**53**	**27**	**26**	**15**	1779	172	8
8	W	**12**	**12**	**10**	**5**	**14**	**52**	**110**	**161**	**175**	**120**	**100**	**94**	**114**	**122**	**90**	**120**	**86**	**78**	**52**	**45**	**45**	**37**	**22**	**17**	1693	175	8
9	T	**9**	**8**	**10**	**20**	**22**	**54**	**91**																				
10	F																											
11	S																											
12	S																											
13	M																											
14	T																											
15	W																											
16	T																											
17	F																											
18	S																											
19	S																											
20	M																											
21	T																											
22	W																											
23	T																											
24	F																											
25	S																											
26	S																											
27	M																											
28	T																											
29	W																											
30	T																											

AVERAGE WEEKDAY HOURS (Axle Factored, Mon 6AM to Fri Noon)

12 TO 1 AM	1 TO 2 AM	2 TO 3 AM	3 TO 4 AM	4 TO 5 AM	5 TO 6 AM	6 TO 7 AM	7 TO 8 AM	8 TO 9 AM	9 TO 10 AM	10 TO 11 AM	11 TO 12 AM	12 TO 1 PM	1 TO 2 PM	2 TO 3 PM	3 TO 4 PM	4 TO 5 PM	5 TO 6 PM	6 TO 7 PM	7 TO 8 PM	8 TO 9 PM	9 TO 10 PM	10 TO 11 PM	11 TO 12 PM	ADT
9	**8**	**9**	**11**	**20**	**52**	**100**	**162**	**175**	**115**	**103**	**105**	**124**	**135**	**107**	**104**	**86**	**85**	**71**	**50**	**45**	**34**	**22**	**17**	**1749**

DAYS Counted	HOURS Counted	WEEKDAYS Counted	WEEKDAY Hours	AVERAGE WEEKDAY High Hour	AVERAGE WEEKDAY % of day	Axle Adj. Factor	Seasonal/Weekday Adjustment Factor
4	72	4	72	175	10%	0.982	1.052

ESTIMATED

AADT

1663

New York State Department of Transportation

Traffic Count Hourly Report

ROUTE #: **913J** ROAD NAME: **913J**
DIRECTION: Westbound FACTOR GROUP: 30
STATE DIR CODE: 3 WK OF YR: 13
DATE OF COUNT: 03/25/2009
NOTES LANE 1: Week 12-Wb One Way only

COUNT TAKEN BY: ORG CODE: TST INITIALS: JSV

FROM: **RT 32 NORTHERN RAMP**
REC. SERIAL #: 0087
PLACEMENT: 300' E of SR9W
@ REF MARKER:
ADDL DATA:
COUNT TYPE: VEHICLES
PROCESSED BY: ORG CODE: DOT INITIALS: SJW

TO: **END AT RT 9W**
FUNC. CLASS: 14
NHS: yes
JURIS: NYSDOT
CC Stn:
BATCH ID: DOT-SJWr1ww12

COUNTY: **Albany**
TOWN: **BETHLEHEM**
LION#:
BIN:
RR CROSSING:
HPMS SAMPLE:

DATE	DAY	12 TO 1 AM	1 TO 2 AM	2 TO 3 AM	3 TO 4 AM	4 TO 5 AM	5 TO 6 AM	6 TO 7 AM	7 TO 8 AM	8 TO 9 AM	9 TO 10 AM	10 TO 11 AM	11 TO 12 AM	12 TO 1 PM	1 TO 2 PM	2 TO 3 PM	3 TO 4 PM	4 TO 5 PM	5 TO 6 PM	6 TO 7 PM	7 TO 8 PM	8 TO 9 PM	9 TO 10 PM	10 TO 11 PM	11 TO 12 PM	DAILY TOTAL	DAILY HIGH COUNT	DAILY HIGH HOUR
1	S																											
2	M																											
3	T																											
4	W																											
5	T																											
6	F																											
7	S																											
8	S																											
9	M																											
10	T																											
11	W																											
12	T																											
13	F																											
14	S																											
15	S																											
16	M																											
17	T																											
18	W																											
19	T																											
20	F																											
21	S																											
22	S																											
23	M																											
24	T																											
25	W													71	125	99	120	133	126	123	107	51	46	29	41	27			
26	T	18	17	19	27	33	30	126	207	178	140	121	74	144	137	116	132	120	126	95	56	38	34	27	26	2041	207	7
27	F	14	15	23	26	20	31	92	143	157	108	120	126	149	120	128	135	149	120	98	57	41	40	31	37	1980	157	8
28	S	29	18	7	20	14	18	45	84	72	106	110	142	118	94	103	89	79	82	76	63	50	33	34	42	1528	142	11
29	S	11	18	14	12	15	21	33	35	39	62	80	97	102	98	89	80	64	64	73	72	61	38	20	28	1226	102	12
30	M	20	15	10	33	35	36	92	154	149	112	82	102	117	90	112	115	105	111	93	64	40	36	38	36	1797	154	7
31	T	20	13	11	19	27	57	120	154	196	139	67																
AVERAGE WEEKDAY HOURS (Axle Factored, Mon 6AM to Fri Noon)		17	15	18	24	27	39	108	164	170	125	98	93	129	109	116	127	117	120	98	57	41	33	35	30	**ADT** 1910		

DAYS Counted	HOURS Counted	WEEKDAYS Counted	WEEKDAY Hours	AVERAGE WEEKDAY High Hour	AVERAGE WEEKDAY % of day	Axle Adj. Factor	Seasonal/Weekday Adjustment Factor
7	144	4	78	170	9%	1.000	1.025

ESTIMATED

AADT

1863

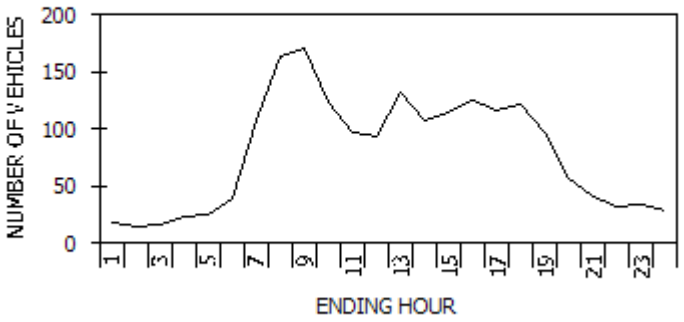
New York State Department of Transportation
Classification Count Average Weekday Data Report

ROUTE #: 913J ROAD NAME: 913J YEAR: 2009 STATION: 110926
COUNTY NAME: Albany MONTH: March
REGION CODE: 1
FROM: RT 32 NORTHERN RAMP
TO: END AT RT 9W
REF-MARKER:
END MILEPOINT: 0110006 NO. OF LANES: 1
FUNC-CLASS: 14 HPMS NO:
STATION NO: 0926 LION#:
COUNT TAKEN BY: ORG CODE: TST INITIALS: JSV
PROCESSED BY: ORG CODE: DOT INITIALS: SJW BATCH ID: DOT-SJWr1ww12

DIRECTION	West	TOTAL
NUMBER OF VEHICLES	**1903**	**1903**
NUMBER OF AXLES	**4018**	**4018**
% HEAVY VEHICLES (F4-F13)	**6.25%**	**6.25%**
% TRUCKS AND BUSES (F3-F13)	**16.82%**	**16.82%**
AXLE CORRECTION FACTOR	**0.95**	**0.95**

VEHICLE CLASS		F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11	F12	F13	TOTAL
NO. OF AXLES		2	2	2	2.5	2	3	4	3.5	5	6	5	6	8.75	
ENDING HOUR	1:00	0	14	2	0	1	1	0	0	0	0	0	0	0	**18**
	2:00	1	11	1	0	0	0	0	0	0	0	0	0	1	**14**
	3:00	1	15	1	0	0	0	0	0	0	0	0	0	0	**17**
	4:00	1	21	1	0	0	0	0	0	0	0	0	0	1	**24**
	5:00	1	20	3	0	0	0	0	0	0	0	0	0	2	**26**
	6:00	2	29	5	0	0	1	0	0	0	0	0	0	2	**39**
	7:00	8	86	6	1	1	4	0	0	0	0	0	0	1	**107**
	8:00	8	136	9	0	2	7	0	0	0	0	0	0	2	**164**
	9:00	8	139	13	1	1	8	0	0	0	0	0	0	1	**171**
	10:00	5	98	12	1	2	5	0	0	0	0	0	0	1	**124**
DIRECTION	11:00	4	77	10	1	2	3	0	0	0	0	0	0	1	**98**
West	12:00	4	68	14	1	2	2	0	0	0	0	0	0	2	**93**
	13:00	6	102	17	0	5	2	0	0	0	0	0	0	1	**133**
	14:00	5	80	15	1	3	3	0	0	0	0	0	0	1	**108**
	15:00	4	83	20	3	2	1	0	0	0	0	0	0	2	**115**
	16:00	1	100	19	1	2	2	0	0	0	0	0	0	0	**125**
	17:00	2	91	14	1	2	5	0	0	0	1	0	0	1	**117**
	18:00	2	98	13	1	2	3	0	0	0	0	0	0	2	**121**
	19:00	2	82	9	1	2	1	0	0	0	0	0	0	0	**97**
	20:00	1	48	4	0	0	2	0	0	0	0	0	0	1	**56**
	21:00	1	36	4	0	0	0	0	0	0	0	0	0	0	**41**
	22:00	1	26	4	0	0	1	0	0	0	0	0	0	0	**32**
	23:00	1	29	2	0	0	2	0	0	0	0	0	0	0	**34**
	24:00	0	25	3	0	0	1	0	0	0	0	0	0	0	**29**
TOTAL VEHICLES		**69**	**1514**	**201**	**13**	**29**	**54**	**0**	**0**	**0**	**1**	**0**	**0**	**22**	**1903**
TOTAL AXLES		138	3028	402	32	58	162	0	0	0	6	0	0	192	4018
GRAND TOTAL VEHICLES		**69**	**1514**	**201**	**13**	**29**	**54**	**0**	**0**	**0**	**1**	**0**	**0**	**22**	**1903**
GRAND TOTAL AXLES		138	3028	402	32	58	162	0	0	0	6	0	0	192	4018

TRAFFIC FLOW BY DIRECTION



--- West

PEAK HOUR DATA

DIRECTION	HOUR	COUNT	2-WAY	HOUR	COUNT
West	**9**	**171**	**A.M.**	**9**	**171**

VEHICLE CLASSIFICATION CODES:

F1. Motorcycles
F2. Autos*
F3. 2 Axle, 4-Tire Pickups, Vans, Motorhomes*
F4. Buses
F5. 2 Axle, 6-Tire Single Unit Trucks
F6. 3 Axle Single Unit Trucks
F7. 4 or More Axle Single Unit Trucks
F8. 4 or Less Axle Vehicles, One Unit is a Truck
F9. 5 Axle Double Unit Vehicles, One Unit is a Truck
F10. 6 or More Double Unit Vehicles, One Unit is a Truck
F11. 5 or Less Axle Multi-Unit Trucks
F12. 6 Axle Multi-Unit Trucks
F13. 7 or More Axle Multi-Unit Trucks

* INCLUDING THOSE HAULING TRAILERS

FUNCTIONAL CLASS CODES:

RURAL	URBAN	SYSTEM
01	11	PRINCIPAL ARTERIAL-INTERSTATE
02	12	PRINCIPAL ARTERIAL-EXPRESSWAY
02	14	PRINCIPAL ARTERIAL-OTHER
06	16	MINOR ARTERIAL
07	17	MAJOR COLLECTOR
08	17	MINOR COLLECTOR
09	19	LOCAL SYSTEM

SOURCE: NYSDOT DATA SERVICES BUREAU

New York State Department of Transportation
Speed Count Average Weekday Report

Date: 04/29/2009

Station:	110926		Start date:	Wed 03/25/2009 11:00	Count duration:	144 hours
Route #:	913J Road name: 913J		End date:	Tue 03/31/2009 10:45	Functional class:	14
From:	RT 32 NORTHERN RAMP		County:	Albany	Factor group:	30
To:	END AT RT 9W		Town:	BETHLEHEM	Batch ID:	DOT-SJWr1ww12
Direction:	West		Speed limit:	25	Count taken by:	Org: TST Init: JSV
			LION#:		Processed by:	Org: DOT Init: SJW

Speeds, mph

Hour	0.0-20.0	20.1-25.0	25.1-30.0	30.1-35.0	35.1-40.0	40.1-45.0	45.1-50.0	50.1-55.0	55.1-60.0	60.1-65.0	70.1-75.0	75.1-95.0	% Exc 45.0	% Exc 50.0	% Exc 55.0	% Exc 60.0	% Exc 65.0	Avg	50th%	85th%	Total
1:00	2	9	9	3	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	23.7	25.3	29.8	23
2:00	4	4	10	1	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	21.8	25.8	29.1	19
3:00	4	9	6	3	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	21.8	23.9	29.8	22
4:00	4	7	16	1	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	22.9	26.0	29.0	28
5:00	5	21	7	2	1	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	21.8	23.1	28.3	36
6:00	8	18	18	4	3	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	22.6	24.9	29.9	51
7:00	37	52	32	14	2	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	20.3	23.1	29.3	137
8:00	81	72	48	14	3	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	18.9	22.0	28.4	218
9:00	69	79	47	18	4	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	19.6	22.6	28.9	217
10:00	29	48	49	20	3	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	22.0	24.8	30.2	149
11:00	21	43	41	8	2	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	21.8	24.3	29.2	115
12:00	18	44	38	6	2	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	21.9	24.1	29.0	108
13:00	27	46	58	15	2	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	22.1	25.1	29.6	148
14:00	25	34	50	10	1	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	21.7	25.2	29.4	120
15:00	20	44	43	18	4	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	22.7	25.1	30.8	129
16:00	18	52	53	20	1	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	23.1	25.2	30.0	144
17:00	18	39	55	21	3	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	23.4	26.0	30.9	136
18:00	14	37	70	18	3	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	24.2	26.5	30.0	142
19:00	11	37	59	12	2	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	24.0	26.1	29.7	121
20:00	10	23	24	9	1	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	22.7	25.2	30.0	67
21:00	9	16	21	6	1	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	22.4	25.4	29.8	53
22:00	4	21	17	3	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	23.2	24.5	28.9	45
23:00	9	21	16	3	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	21.5	23.7	28.7	49
24:00	4	15	16	3	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	23.2	25.0	29.2	38
Avg. Daily Total	451	791	803	232	38	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	21.8	24.5	29.6	2315
Percent	19.5%	34.2%	34.7%	10.0%	1.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%									
Cum. Percent	19.5%	53.7%	88.3%	98.4%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%									
Average hour	19	33	33	10	2	0	0	0	0	0	0	0	0									96

	Avg. Speed	50th% Speed	85th% Speed
West	21.8	24.5	29.6

Peak Hour Data

Direction	Hour	Count	1-way	Hour	Count
West	8	218	A.M.	8	218
			P.M.	13	148

TRAFFIC FLOW BY DIRECTION



--- West

New York State Department of Transportation

Traffic Count Hourly Report

ROUTE #: **NY 144** ROAD NAME:
DIRECTION: Northbound FACTOR GROUP: 30
STATE DIR CODE: 1 WK OF YR: 49
DATE OF COUNT: 11/30/2010
NOTES LANE 1: Week 49 North Bound

COUNT TAKEN BY: ORG CODE: TST INITIALS: BEK

FROM: **ACC RT 87I**
REC. SERIAL #: 0006
PLACEMENT: .50 Mi N of NYS Thwy Ex 22
@ REF MARKER: 144 11021077
ADDL DATA:
COUNT TYPE: AXLE PAIRS

PROCESSED BY: ORG CODE: DOT INITIALS: JSR

TO: **RT 910A JCT**
FUNC. CLASS: 16
NHS: no
JURIS: NYSDOT
CC Stn:
BATCH ID: DOT-R1_DOTWW49c

COUNTY: **Albany**
TOWN: **BETHLEHEM**
LION#:
BIN: 1038120
RR CROSSING:
HPMS SAMPLE:

		AM												PM													
		12 TO 1	1 TO 2	2 TO 3	3 TO 4	4 TO 5	5 TO 6	6 TO 7	7 TO 8	8 TO 9	9 TO 10	10 TO 11	11 TO 12	12 TO 1	1 TO 2	2 TO 3	3 TO 4	4 TO 5	5 TO 6	6 TO 7	7 TO 8	8 TO 9	9 TO 10	10 TO 11	11 TO 12	DAILY TOTAL	DAILY HIGH COUNT	DAILY HIGH HOUR
DATE	DAY																										
30	T	**8**	**4**	**6**	**8**	**19**	**50**	**150**	**309**	**228**	**155**	**104**	**107**	**97**	**129**	**106**	**133**	**124**	**92**	**73**	**43**	**32**	**24**	**19**	**15**	2035	309	7
1	W	**12**	**9**	**6**	**4**	**12**	**49**	**146**	**286**	**221**	**119**	**99**	**93**	**85**	**94**	**97**	**140**	**110**	**99**	**79**	**43**	**31**	**27**	**24**	**19**	1904	286	7
2	T	**11**	**8**	**3**	**9**	**20**	**48**	**133**	**282**	**212**	**133**	**114**	**94**	**106**	**123**	**138**	**149**	**149**	**138**	**78**	**49**	**38**	**43**	**19**	**19**	2116	282	7
3	F	**5**	**10**	**7**	**14**	**24**	**52**	**134**	**266**	**236**	**120**	**123**	**108**	**121**	**111**	**145**	**163**	**136**	**137**	**100**	**60**	**43**	**35**	**31**	**29**	2210	266	7
4	S	**9**	**9**	**5**	**9**	**13**	**19**	**46**	**52**	**69**	**113**	**114**	**127**	**100**	**98**	**122**	**109**	**102**	**101**	**75**	**55**	**37**	**37**	**37**	**20**	1478	127	11
5	S	**9**	**9**	**3**	**4**	**6**	**12**	**19**	**31**	**49**	**89**	**78**	**118**	**111**	**124**	**98**	**99**	**77**	**78**	**74**	**59**	**44**	**30**	**26**	**15**	1262	124	13
6	M	**9**	**5**	**2**	**14**	**22**	**48**	**142**	**286**	**247**	**128**	**118**	**106**	**104**	**121**	**125**	**147**	**121**	**119**	**76**	**38**	**41**	**28**	**20**	**22**	2089	286	7
7	T	**10**	**9**	**4**	**14**	**19**	**57**	**136**	**299**	**232**	**164**																

AVERAGE WEEKDAY HOURS (Axle Factored, Mon 6AM to Fri Noon)

																								ADT
9	**8**	**5**	**10**	**19**	**50**	**137**	**282**	**224**	**133**	**110**	**100**	**96**	**114**	**113**	**139**	**123**	**110**	**74**	**42**	**35**	**29**	**20**	**19**	**2001**

DAYS Counted	HOURS Counted	WEEKDAYS Counted	WEEKDAY Hours	AVERAGE WEEKDAY High Hour	AVERAGE WEEKDAY % of day	Axle Adj. Factor	Seasonal/Weekday Adjustment Factor
7	178	4	112	282	14%	0.978	1.030

ESTIMATED (one way)

AADT

1943

New York State Department of Transportation

Traffic Count Hourly Report

ROUTE #: **NY 144** ROAD NAME:
DIRECTION: Southbound FACTOR GROUP: 30
STATE DIR CODE: 2 WK OF YR: 49
DATE OF COUNT: 11/30/2010
NOTES LANE 1: Week 49 South Bound

COUNT TAKEN BY: ORG CODE: TST INITIALS: BEK

FROM: **ACC RT 87I**
REC. SERIAL #: 0006
PLACEMENT: .50 Mi N of NYS Thwy Ex 22
@ REF MARKER: 144 11021077
ADDL DATA:
COUNT TYPE: AXLE PAIRS

PROCESSED BY: ORG CODE: DOT INITIALS: JSR

TO: **RT 910A JCT**
FUNC. CLASS: 16
NHS: no
JURIS: NYSDOT
CC Stn:
BATCH ID: DOT-R1_DOTWW49c

COUNTY: **Albany**
TOWN: **BETHLEHEM**
LION#:
BIN: 1038120
RR CROSSING:
HPMS SAMPLE:

DATE	DAY	12 TO 1 AM	1 TO 2 AM	2 TO 3 AM	3 TO 4 AM	4 TO 5 AM	5 TO 6 AM	6 TO 7 AM	7 TO 8 AM	8 TO 9 AM	9 TO 10 AM	10 TO 11 AM	11 TO 12 AM	12 TO 1 PM	1 TO 2 PM	2 TO 3 PM	3 TO 4 PM	4 TO 5 PM	5 TO 6 PM	6 TO 7 PM	7 TO 8 PM	8 TO 9 PM	9 TO 10 PM	10 TO 11 PM	11 TO 12 PM	DAILY TOTAL	DAILY HIGH COUNT	DAILY HIGH HOUR
30	T	**20**	**6**	**12**	**10**	**20**	**30**	**91**	**132**	**130**	**113**	**86**	**115**	**101**	**123**	**161**	**206**	**263**	**235**	**109**	**59**	**56**	**57**	**37**	**25**	2197	263	16
1	W	**28**	**4**	**16**	**7**	**12**	**39**	**96**	**121**	**107**	**84**	**105**	**98**	**94**	**104**	**143**	**187**	**255**	**209**	**137**	**66**	**71**	**50**	**39**	**29**	2101	255	16
2	T	**23**	**16**	**10**	**11**	**16**	**35**	**83**	**126**	**111**	**87**	**85**	**89**	**124**	**125**	**148**	**217**	**278**	**248**	**125**	**89**	**68**	**61**	**43**	**39**	2257	278	16
3	F	**22**	**19**	**9**	**19**	**19**	**30**	**80**	**132**	**136**	**104**	**95**	**94**	**122**	**133**	**160**	**235**	**260**	**245**	**129**	**85**	**61**	**67**	**59**	**45**	2360	260	16
4	S	**26**	**14**	**10**	**6**	**11**	**18**	**43**	**50**	**56**	**78**	**99**	**117**	**117**	**151**	**112**	**134**	**113**	**112**	**66**	**55**	**44**	**45**	**53**	**36**	1566	151	13
5	S	**29**	**10**	**8**	**9**	**7**	**23**	**24**	**26**	**42**	**68**	**88**	**92**	**95**	**94**	**111**	**121**	**114**	**71**	**75**	**67**	**40**	**38**	**28**	**17**	1297	121	15
6	M	**10**	**8**	**8**	**10**	**19**	**36**	**97**	**123**	**123**	**108**	**108**	**104**	**104**	**130**	**152**	**205**	**233**	**223**	**142**	**80**	**67**	**48**	**30**	**31**	2199	233	16
7	T	**19**	**10**	**9**	**15**	**14**	**38**	**80**	**137**	**125**	**107**																	

AVERAGE WEEKDAY HOURS (Axle Factored, Mon 6AM to Fri Noon)

12 TO 1 AM	1 TO 2 AM	2 TO 3 AM	3 TO 4 AM	4 TO 5 AM	5 TO 6 AM	6 TO 7 AM	7 TO 8 AM	8 TO 9 AM	9 TO 10 AM	10 TO 11 AM	11 TO 12 AM	12 TO 1 PM	1 TO 2 PM	2 TO 3 PM	3 TO 4 PM	4 TO 5 PM	5 TO 6 PM	6 TO 7 PM	7 TO 8 PM	8 TO 9 PM	9 TO 10 PM	10 TO 11 PM	11 TO 12 PM	ADT
22	**11**	**11**	**12**	**16**	**33**	**86**	**125**	**119**	**98**	**94**	**98**	**104**	**117**	**148**	**200**	**251**	**224**	**125**	**72**	**65**	**53**	**36**	**30**	**2150**

DAYS Counted	HOURS Counted	WEEKDAYS Counted	WEEKDAY Hours	AVERAGE WEEKDAY High Hour	AVERAGE WEEKDAY % of day	Axle Adj. Factor	Seasonal/Weekday Adjustment Factor
7	178	4	112	251	12%	0.978	1.030

ESTIMATED (one way)

AADT
2087

New York State Department of Transportation

Traffic Count Hourly Report

ROUTE #: **NY 32** ROAD NAME:
DIRECTION: Northbound FACTOR GROUP: 30
STATE DIR CODE: 1 WK OF YR: 45
DATE OF COUNT: 11/03/2010
NOTES LANE 1: Week 45 North Bound

COUNT TAKEN BY: ORG CODE: TST INITIALS: ---

FROM: **RT 144 JCT**
REC. SERIAL #: 0048
PLACEMENT: 50 Ft S of S port rd
@ REF MARKER: 32 11042000
ADDL DATA:
COUNT TYPE: AXLE PAIRS
PROCESSED BY: ORG CODE: DOT INITIALS: JSR

TO: **ALBANY S CITY LN**
FUNC. CLASS: 16
NHS: no
JURIS: NYSDOT
CC Stn:
BATCH ID: DOT-R1_SC_WW45a

COUNTY: **Albany**
TOWN: **BETHLEHEM**
LION#:
BIN: 1022450
RR CROSSING:
HPMS SAMPLE:

DATE	DAY	12 TO 1 AM	1 TO 2 AM	2 TO 3 AM	3 TO 4 AM	4 TO 5 AM	5 TO 6 AM	6 TO 7 AM	7 TO 8 AM	8 TO 9 AM	9 TO 10 AM	10 TO 11 AM	11 TO 12 AM	12 TO 1 PM	1 TO 2 PM	2 TO 3 PM	3 TO 4 PM	4 TO 5 PM	5 TO 6 PM	6 TO 7 PM	7 TO 8 PM	8 TO 9 PM	9 TO 10 PM	10 TO 11 PM	11 TO 12 PM	DAILY TOTAL	DAILY HIGH COUNT	DAILY HIGH HOUR
1	M																											
2	T																											
3	W																				**96**	**55**	**42**	**42**	**19**			
4	T	**28**	**14**	**17**	**26**	**37**	**110**	**269**	**606**	**577**	**327**	**227**	**248**	**288**	**237**	**243**	**250**	**243**	**236**	**137**	**88**	**63**	**51**	**42**	**26**	4390	606	7
5	F	**24**	**15**	**14**	**23**	**28**	**114**	**264**	**634**	**545**	**341**	**237**	**285**	**286**	**264**	**267**	**271**	**234**	**235**	**167**	**107**	**53**	**50**	**52**	**28**	4538	634	7
6	S	**21**	**13**	**10**	**18**	**19**	**39**	**85**	**116**	**128**	**140**	**164**	**190**	**180**	**158**	**155**	**168**	**154**	**157**	**119**	**80**	**61**	**55**	**40**	**28**	2298	190	11
7	S	**22**	**13**	**4**	**11**	**5**	**16**	**19**	**57**	**50**	**84**	**107**	**130**	**133**	**144**	**153**	**148**	**149**	**126**	**119**	**99**	**76**	**45**	**35**	**22**	1767	153	14
8	M	**20**	**25**	**18**	**17**	**13**	**31**	**137**	**278**	**615**	**559**	**321**	**236**	**197**	**211**	**219**	**201**	**205**	**209**	**171**	**121**	**76**	**46**	**30**	**35**	3991	615	8
9	T	**23**	**20**	**17**	**14**	**30**	**26**	**116**	**314**	**620**	**543**	**342**	**234**	**253**	**291**	**265**	**252**	**233**	**222**	**202**	**172**	**89**	**69**	**47**	**34**	4428	620	8
10	W	**20**	**32**	**14**	**16**	**19**	**30**	**113**	**299**	**613**	**535**	**346**	**249**	**251**	**261**	**289**	**267**	**277**	**247**	**244**	**143**	**88**	**60**	**52**	**41**	4506	613	8
11	T	**25**	**27**	**14**	**21**	**22**	**24**	**99**	**259**	**376**	**358**	**264**	**258**	**229**	**272**	**233**	**260**	**221**	**241**	**210**	**146**	**79**	**70**	**48**	**31**	3787	376	8
12	F	**21**	**28**	**15**	**17**	**20**	**29**	**119**	**264**	**448**																		
13	S																											
14	S																											
15	M																											
16	T																											
17	W																											
18	T																											
19	F																											
20	S																											
21	S																											
22	M																											
23	T																											
24	W																											
25	T																											
26	F																											
27	S																											
28	S																											
29	M																											
30	T																											

AVERAGE WEEKDAY HOURS (Axle Factored, Mon 6AM to Fri Noon)

12 TO 1 AM	1 TO 2 AM	2 TO 3 AM	3 TO 4 AM	4 TO 5 AM	5 TO 6 AM	6 TO 7 AM	7 TO 8 AM	8 TO 9 AM	9 TO 10 AM	10 TO 11 AM	11 TO 12 AM	12 TO 1 PM	1 TO 2 PM	2 TO 3 PM	3 TO 4 PM	4 TO 5 PM	5 TO 6 PM	6 TO 7 PM	7 TO 8 PM	8 TO 9 PM	9 TO 10 PM	10 TO 11 PM	11 TO 12 PM	ADT
23	**22**	**15**	**20**	**25**	**55**	**156**	**371**	**530**	**434**	**284**	**246**	**239**	**248**	**244**	**241**	**231**	**226**	**189**	**125**	**73**	**55**	**43**	**30**	**4125**

DAYS Counted	HOURS Counted	WEEKDAYS Counted	WEEKDAY Hours	AVERAGE WEEKDAY High Hour	AVERAGE WEEKDAY % of day	Axle Adj. Factor	Seasonal/Weekday Adjustment Factor
10	206	7	140	530	13%	0.978	1.030

ESTIMATED (one way)

AADT
4005

New York State Department of Transportation

Traffic Count Hourly Report

ROUTE #: **NY 32** ROAD NAME:
DIRECTION: Southbound FACTOR GROUP: 30
STATE DIR CODE: 2 WK OF YR: 45
DATE OF COUNT: 11/03/2010
NOTES LANE 1: Week 45 South Bound

COUNT TAKEN BY: ORG CODE: TST INITIALS: ---

FROM: **RT 144 JCT**
REC. SERIAL #: 0048
PLACEMENT: 50 Ft S of S port rd
@ REF MARKER: 32 11042000
ADDL DATA:
COUNT TYPE: AXLE PAIRS
PROCESSED BY: ORG CODE: DOT INITIALS: JSR

TO: **ALBANY S CITY LN**
FUNC. CLASS: 16
NHS: no
JURIS: NYSDOT
CC Stn:
BATCH ID: DOT-R1_SC_WW45a

COUNTY: **Albany**
TOWN: **BETHLEHEM**
LION#:
BIN: 1022450
RR CROSSING:
HPMS SAMPLE:

		AM												PM													
		12 TO 1	1 TO 2	2 TO 3	3 TO 4	4 TO 5	5 TO 6	6 TO 7	7 TO 8	8 TO 9	9 TO 10	10 TO 11	11 TO 12	12 TO 1	1 TO 2	2 TO 3	3 TO 4	4 TO 5	5 TO 6	6 TO 7	7 TO 8	8 TO 9	9 TO 10	10 TO 11	11 TO 12	DAILY TOTAL	DAILY HIGH COUNT	DAILY HIGH HOUR
DATE	DAY																											
1	M																											
2	T																											
3	W																				**205**	**145**	**123**	**85**	**67**			
4	T	**47**	**30**	**19**	**30**	**48**	**60**	**150**	**252**	**274**	**268**	**235**	**305**	**366**	**319**	**365**	**504**	**689**	**702**	**283**	**178**	**144**	**115**	**114**	**64**	5561	702	17
5	F	**32**	**30**	**27**	**30**	**33**	**82**	**172**	**253**	**287**	**279**	**262**	**317**	**378**	**336**	**431**	**526**	**729**	**640**	**308**	**167**	**146**	**119**	**109**	**85**	5778	729	16
6	S	**65**	**36**	**25**	**26**	**22**	**46**	**69**	**122**	**119**	**141**	**177**	**219**	**272**	**264**	**261**	**261**	**247**	**227**	**170**	**128**	**118**	**120**	**86**	**79**	3300	272	12
7	S	**49**	**33**	**33**	**24**	**14**	**19**	**26**	**46**	**67**	**67**	**123**	**132**	**197**	**232**	**225**	**228**	**222**	**201**	**188**	**146**	**123**	**88**	**79**	**41**	2603	232	13
8	M	**37**	**35**	**26**	**17**	**24**	**29**	**83**	**196**	**256**	**249**	**265**	**239**	**283**	**284**	**279**	**304**	**441**	**651**	**646**	**226**	**139**	**107**	**105**	**66**	4987	651	17
9	T	**55**	**41**	**33**	**26**	**45**	**39**	**58**	**170**	**253**	**274**	**270**	**270**	**315**	**338**	**343**	**378**	**549**	**711**	**684**	**307**	**164**	**118**	**120**	**81**	5642	711	17
10	W	**71**	**48**	**22**	**22**	**22**	**41**	**74**	**168**	**284**	**270**	**309**	**298**	**323**	**329**	**354**	**426**	**543**	**700**	**710**	**295**	**180**	**167**	**138**	**89**	5883	710	18
11	T	**70**	**30**	**41**	**29**	**22**	**27**	**68**	**161**	**265**	**229**	**257**	**289**	**284**	**339**	**338**	**394**	**457**	**533**	**467**	**229**	**139**	**149**	**115**	**77**	5009	533	17
12	F	**54**	**40**	**24**	**25**	**30**	**30**	**75**	**182**	**254**																		
13	S																											
14	S																											
15	M																											
16	T																											
17	W																											
18	T																											
19	F																											
20	S																											
21	S																											
22	M																											
23	T																											
24	W																											
25	T																											
26	F																											
27	S																											
28	S																											
29	M																											
30	T																											

AVERAGE WEEKDAY HOURS (Axle Factored, Mon 6AM to Fri Noon)

																								ADT
54	**35**	**27**	**26**	**32**	**45**	**95**	**193**	**262**	**256**	**260**	**280**	**307**	**315**	**329**	**392**	**524**	**645**	**546**	**235**	**149**	**127**	**111**	**72**	**5317**

DAYS Counted	HOURS Counted	WEEKDAYS Counted	WEEKDAY Hours	AVERAGE WEEKDAY High Hour	AVERAGE WEEKDAY % of day	Axle Adj. Factor	Seasonal/Weekday Adjustment Factor
10	206	7	140	645	12%	0.978	1.030

ESTIMATED (one way)

AADT
5162

APPENDIX B

TRAFFIC CALCULATIONS

- NYSDOT Traffic Volume Report – Historic Volumes
- NYS Route 144 at Glenmont Road Gap Analysis Calculations
- Truck Sensitivity LOS Table
- Regression Analysis

Station	FC	County Order	End Mile Point	Section Length	Road Name	Beginning Description	End Description	2017 Estimate AADT	2017 Estimate % Trucks	Previous Counts YEAR	Previous Counts AADT	Previous Counts YEAR	Previous Counts AADT	Previous Counts YEAR	Previous Counts AADT	Previous Counts YEAR	Previous Counts AADT
14_0490	16	01	0324	0036	NORTHERN DR	END 40/142 OLAP/LEVERSEE RD	OIL MILL HILL RD		4.3								
14_0034	16	01	0368	0044	NORTHERN DR	OIL MILL HILL RD	125TH ST	6826	3.2	2015	6890	2009	10190	2008	10521	2004	13199
14_0052	16	01	0387	0019	125TH ST	125TH ST	RT 4 END RT 142	7321	4.8	2015	7389	2013	8514	2009	7378	2008	7528
Route	**NY143**	**County**	**001**	**Albany**		**Region**	**01**										
11_0001	8	01	0610	0610		RT 85 FORDS CORNERS	START 32/143 OLAP	693	7.1	2016	693	2013	788	2010	844	2006	994
11_0041	7	01	0841	0231		START 32/143 OLAP	END 32/143 OLAP	4876	6	2017	4876	2008	4759	2005	4624	2002	4454
11_0040	8	01	1124	0283		END 32/143 OLAP	CR 111	998	9.5	2015	998	2010	830	2006	1057	2005	913
11_0036	8	01	1371	0247		CR 111	CR 106	1513	8.4	2016	1513	2010	1480	2007	1596	2004	1813
11_0241	8	01	1744	0373		CR 106	RT 9W W OF RAVENA	2555	6.4	2017	2555	2010	2180	2006	3497	2004	3258
11_0170	17	01	1771	0027	MAIN ST	RT 9W W OF RAVENA	MOUNTAIN RD	4817	10.9	2016	4842	2010	4560	2007	5314	2004	5244
11_0038	17	01	1880	0109		MOUNTAIN RD	RT 144 COEYMANS END RT 143	3691	7	2015	3730	2009	4570	2004	3881	2001	3869
Route	**NY144**	**County**	**039**	**Greene**		**Region**	**01**										
13_0051	7	01	0202	0202		RT 9W JCT	CR 61 NEW BALTIMORE	870	7.9	2016	872	2013	850	2010	760	2007	831
13_0052	17	01	0335	0133		CR 61 NEW BALTIMORE	Greene/Alb Co Line	1259	8.9	2016	1266	2013	1300	2010	1281	2006	1277
Route	**NY144**	**County**	**001**	**Albany**		**Region**	**01**										
11_0039	17	02	0080	0080		Greene/Alb Co Line	RT 143 COEYMANS	1386	4	2015	1400	2014	1299	2009	1339	2005	1491
11_0501	7	02	0481	0401		RT 143 COEYMANS	RT 396 SELKIRK	4584	7	2016	4596	2015	4406	2010	4054	2007	4220
11_0509	7	02	0525	0044		RT 396 SELKIRK	ACC RT 87I	6973	11.8	2017	6973	2008	7223	2006	6453	2001	7563
11_0061	16	02	1033	0508		ACC RT 87I	RT 910A JCT	5177	12.4	2016	5201	2010	4030	2006	4415	2001	4688
11_0062	16	02	1136	0103		RT 910A JCT	RT 32 END RT 144	6239	12.2	2017	7807	2011	6597	2007	8515	2003	6616
Route	**NY145**	**County**	**039**	**Greene**		**Region**	**01**										
13_0058	6	01	0270	0270		RT 23	CR 31 ACRA	4805	7.6	2016	4807	2010	4341	2007	4727	2004	4853
13_0403	6	01	0560	0290		CR 31 ACRA	CR 67A TO FREEHOLD	4214	7.6	2016	4215	2013	4094	2010	4007	2006	3868
13_0031	6	01	1255	0695		CR 67A TO FREEHOLD	Greene/Alb Co Line	3604	8.4	2015	3607	2013	3388	2009	3550	2007	3552
Route	**NY145**	**County**	**001**	**Albany**		**Region**	**01**										
11_0116	6	02	0051	0051		Greene/Alb Co Line	RT 81 & RT 910G JCT	1765	10.4	2016	1766	2010	1530	2007	1899	2004	2115
11_0203	6	02	0495	0444		RT 81 & RT 910G JCT	Alb/Schoh Co Line	1550	11.4	2014	1552	2008	1985	2000	3002		
Route	**NY145**	**County**	**095**	**Schoharie**		**Region**	**09**										

Station	FC	County Order	End Mile Point	Section Length	Road Name	Beginning Description	End Description	2017 Estimate AADT	2017 Estimate % Trucks	Previous Counts YEAR	Previous Counts AADT	Previous Counts YEAR	Previous Counts AADT	Previous Counts YEAR	Previous Counts AADT	Previous Counts YEAR	Previous Counts AADT
13_0012	6	03	0619	0247		GAME FARM RD	CR 46	3314	7.8	2016	3315	2013	3357	2010	3047	2006	3465
13_0048	6	03	0893	0274		CR 46	CR 23B	3088	6.6	2014	3091	2008	3297	2005	3467	2002	3506
13_0557	6	03	0921	0028		CR 23B	START 23/32 OLAP	4016	8.7	2016	4017	2013	3977	2010	4089	2007	3734
13_0037	16	03	1032	0111		START 23/32 OLAP	START 23/32 OLAP	11378	7.1	2016	11431	2013	10887	2010	10595	2007	10666
13_0402	7	03	1478	0446		START 23/32 OLAP	CR 67 FREEHOLD	3389	6.5	2016	3398	2010	2994	2007	3451	2003	4054
13_0028	7	03	1904	0426		CR 67 FREEHOLD	RT 81 GREENVILLE	3119	5.9	2015	3135	2010	2748	2006	3162	2003	3615
13_0049	7	03	2054	0150		RT 81 GREENVILLE	Greene/Alb Co Line	5053	4.8	2015	5079	2013	7551	2009	4836	2005	7796
Route	**NY32**		**County**	**001**	**Albany**	**Region**	**01**										
11_0034	7	04	0046	0046		Greene/Alb Co Line	CR 405	4224	5.5	2016	4235	2010	4647	2007	5206	2004	4563
11_0042	7	04	0465	0419		CR 405	START 32/143 OLAP DORMANS	3801	7.7	2016	3811	2010	3144	2006	3783	2005	3558
11_0041	7	04	0696	0231		START 32/143 OLAP DORMANS	END 32/143 OLAP	4876	6	2017	4876	2008	4759	2005	4624	2002	4454
11_0483	7	04	1041	0345		END 32/143 OLAP	CR 301 MEADS COR	5070	4.4	2016	5083	2014	5098	2010	4742	2007	4696
11_0510	7	04	1415	0374		CR 301 MEADS COR	CR 308 FEURA BUSH	5280	4.7	2016	5294	2014	5333	2010	3896	2007	4347
11_0058	7	04	1493	0078		CR 308 FEURA BUSH	SPEEDER RD	7892	9.4	2016	7913	2010	6734	2006	7555	2005	8549
11_0059	16	04	1682	0189		SPEEDER RD	RT 910A FEURA BUSH RD	8089	10.3	2016	8127	2010	7444	2006	7518	2004	8726
11_0060	16	04	1731	0049	ELM AVE EXT	RT 910A FEURA BUSH RD	ELM AVE	6305	9.3	2014	6394	2008	5484	2004	6717		
11_0102	16	04	1762	0031	ELM AVE	ELM AVE	DELMAR BYPASS	9927	7.6	2015	10020	2010	9215	2006	10944	2003	11824
11_0103	12	04	1885	0123		DELMAR BYPASS	RT 335	10793	6.5	2017	10793	2006	11051	2005	10945	2004	10984
11_0104	12	04	2094	0209		RT 335	START 9W/32 OLAP	10732	6.7	2014	11009	2011	12816	2007	11923	2004	12760
11_0063	14	04	2127	0033		START 9W/32 OLAP	END 9W/32 OLAP	29304	6.4	2017	29304	2009	30128	2005	31753	2002	27573
11_0106	16	04	2192	0065		END 9W/32 OLAP	RT 144 JCT	3762	16.3	2017	3762	2015	3405	2013	3539	2006	3725
11_0107	16	04	2200	0008		RT 144 JCT	BEG NORMANS KILL BRIDGE/CITY	9538	14.2	2016	9582	2010	9167	2006	9107	2002	8304
11_0005	16	04	2291	0091	PEARL ST S	BEG NORMANS KILL BRIDGE/CITY	ACC TO I787	11738	14.1	2017	11738	2016	9280	2010	10956	2006	10724
11_0020	17	04	2344	0053		ACC TO I787	JCT CHURCH ST	3286	17.2	2017	3286	2009	4295	2002	3775		
11_0605	17	04	2349	0005	GREEN ST	JCT CHURCH ST	ACC TO I-787 SB	2800	4.6	2017	2800						
11_0009	16	04	2414	0065	PEARL ST S	ACC TO I-787 SB	START RT 20 OLAP	2204	4.8	2016	2214	2010	2565	2008	2737	2005	5226
11_0140	14	04	2422	0008	PEARL ST S	START RT 20 OLAP	END 20/32 OLAP	9839	5.4	2015	9888	2009	13628	2008	11249		
11_0010	14	04	2444	0022	PEARL ST S	END 20/32 OLAP	RT 5 STATE ST	8962	5.4	2011	9096	2008	9989	2005	11360		
11_0072	16	04	2478	0034	PEARL ST N	RT 5 STATE ST	RT 9 CLINTON AVE	8198	4.3	2015	8275	2009	10589	2005	12807	2002	8965
11_0016	16	04	2569	0091	PEARL ST N	RT 9 CLINTON AVE	LOUDONVILLE RD	3833	4.3	2014	3887	2011	3588	2006	3900	2005	4933
11_0088	16	04	2669	0100	PEARL ST N	LOUDONVILLE RD	RT 910C JCT BROADWAY MENANDS	2548	7.2	2015	2572	2009	3316	2004	2159	2001	1963

McFarland Johnson Inc.

2525 NYS Route 332
Canandaigua, NY, 14424
Traffic Count Data

Counts by McFarland Johnson
Counted by NO
Counts Performed via Count Board

File Name : NYS Route 144 @ Glenmont - AM
Site Code : 18437.00
Start Date : 4/8/2019
Page No : 1

Directions Printed: Combined

Start Time	Volume	2 - 3	4 - 5	6 - 7	8 - 9	10 - 11	12 - 13	14 - 15	16 - 17	18 - 19	20 - 21	22 - 23	24 - 25	26 - 27	28 - 29	>29	Int. Total	Average
07:00 AM	0	16	14	6	6	5	5	5	3	1	1	1	3	3	1	1	71	6 - 7
07:15 AM	0	27	10	12	3	5	3	2	4	3	2	1	0	1	1	3	77	6 - 7
07:30 AM	0	30	16	6	12	1	5	4	2	1	1	1	0	0	1	3	83	4 - 5
07:45 AM	0	29	11	8	5	5	1	3	3	1	0	0	2	0	1	5	74	4 - 5
Total	0	102	51	32	26	16	14	14	12	6	4	3	5	4	4	12	305	4 - 5
08:00 AM	0	25	8	8	5	7	6	6	5	2	1	1	0	0	0	3	77	6 - 7
Grand Total	0	127	59	40	31	23	20	20	17	8	5	4	5	4	4	15	382	6 - 7
Total %		33.2	15.4	10.5	8.1	6.0	5.2	5.2	4.5	2.1	1.3	1.0	1.3	1.0	1.0	3.9		

Peak Data Not Available

Total Gaps	102	51	32	26	16	14	14	12	6	4	3	5	4	4	12	
# of Cars per Gap			1	1	1	1	1	2	2	2	2	2	3	3	3	
Available Gaps	0	0	32	26	16	14	14	24	12	8	6	10	12	12	36	

Total Gaps for Eastbound Left: 222

McFarland Johnson Inc.

2525 NYS Route 332
Canandaigua, NY, 14424
Traffic Count Data

Counts by McFarland Johnson
Counted by NO
Counts Performed via Count Board

File Name : NYS Route 144 @ Glenmont - AM
Site Code : 18437.00
Start Date : 4/8/2019
Page No : 1

Directions Printed: Southbound

Start Time	Volume	2 - 3	4 - 5	6 - 7	8 - 9	10 - 11	12 - 13	14 - 15	16 - 17	18 - 19	20 - 21	22 - 23	24 - 25	26 - 27	28 - 29	>29	Int. Total	Average
07:00 AM	30	4	0	0	0	1	0	3	0	2	1	0	1	0	0	13	25	>29
07:15 AM	40	2	7	0	1	1	0	1	1	2	1	0	1	1	1	13	32	24 - 25
07:30 AM	27	1	1	0	1	0	0	1	2	0	0	1	2	0	0	9	18	>29
07:45 AM	34	4	3	2	2	1	1	0	1	0	1	1	1	1	0	10	28	20 - 21
Total	131	11	11	2	4	3	1	5	4	4	3	2	5	2	1	45	103	24 - 25
08:00 AM	44	13	2	2	1	3	0	1	1	0	1	0	1	0	0	12	37	10 - 11
Grand Total	175	24	13	4	5	6	1	6	5	4	4	2	6	2	1	57	140	20 - 21
Total %		17.1	9.3	2.9	3.6	4.3	0.7	4.3	3.6	2.9	2.9	1.4	4.3	1.4	0.7	40.7		

Peak Hour Analysis From 07:00 AM to 08:00 AM - Peak 1 of 1

Peak Occurred:	07:15 AM
Volume	145
High Int.	08:00 AM
Volume	44
PHF	0.824

Total Gaps	11	11	2	4	3	1	5	4	4	3	2	5	2	1	45
# of Cars per Gap	0	0	x1	x1	x1	x1	x1	x1	x2	x2	x2	x2	x3	x3	x3
Available Gaps	0	0	2	4	3	1	5	4	8	6	4	10	6	3	135

Total Gaps for Eastbound Rights: 191

Total Gaps	11	11	2	4	3	1	5	4	4	3	2	5	2	1	45
# of Cars per Gap	0	1	1	1	2	2	2	3	3	3	3	4	4	4	5
Available Gaps	0	11	2	4	6	2	10	12	12	9	6	20	8	4	225

Total Gaps for Northbound Left: 331

NORTHBOUND / EASTBOUND SINGLE DESTINATION

Study Intersection	Approach and Movement		MORNING PEAK HOUR						EVENING PEAK HOUR					
			2029 BUILD-PHASE III		2029 BUILD- PHASE III - MITIGATION		2029 BUILD- PHASE III - TRUCK SINGLE DESTINATION		2029 BUILD-PHASE III		2029 BUILD- PHASE III - MITIGATION		2029 BUILD- PHASE III - TRUCK SINGLE DESTINATION	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Church Street at Broadway *(Un-Signalized)*	Westbound	L	15.5	C			20.3	C	12.3	B			13.5	B
		R	9.0	A			9.1	A	9.7	A			9.8	A
	Southbound	L	7.6	A			7.7	A	7.9	A			7.9	A
	OVERALL		**7.6**	**A**			**10.2**	**B**	**3.3**	**A**			**3.9**	**A**

SOUTHBOUND SINGLE DESTINATION

Study Intersection	Approach and Movement		MORNING PEAK HOUR						EVENING PEAK HOUR					
			2029 BUILD-PHASE III		2029 BUILD- PHASE III - MITIGATION		2029 BUILD- PHASE III - TRUCK SINGLE DESTINATION		2029 BUILD-PHASE III		2029 BUILD- PHASE III - MITIGATION		2029 BUILD- PHASE III - TRUCK SINGLE DESTINATION	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
NYS Route 32 at South Port Road (Signalized)	Westbound	L	21.8	C	47.7	D	55.3	E	30.7	C	31.8	C	35.9	D
		R			18.4	B	6.8	A			1.3	A	3.4	A
	Northbound	R	15.4	B	19.2	B	44.8	D	8.5	A	5.7	A	16.3	B
	Southbound	L	158.1	F	13.5	B	46.4	D	65.2	E	4.6	A	5.7	A
		T			2.5	A	4.7	A			13.7	B	17.8	B
	OVERALL		**59.5**	**E**	**16.4**	**B**	**36.4**	**D**	**46.0**	**D**	**11.6**	**B**	**17.2**	**B**
NYS Route 144 at NYS Route 32 *(Un-Signalized/Signalized)*	Northbound	T-L	8.4	A	14.8	B	18.4	B	12.1	B	5.9	A	7.7	A
	Eastbound	L	119.9	F	31.1	C	30.5	C	60.0	F	30.3	C	29.7	C
		R	10.8	B	8.0	A	8.7	A	21.5	C	10.2	B	10.9	B
	Southbound	T-R			5.5	A	6.0	A			16.9	B	19.2	B
	OVERALL		**15.5**	**C**	**14.2**	**B**	**16.0**	**B**	**3.9**	**A**	**14.8**	**B**	**16.6**	**B**
NYS Route 144 at Glenmont Road *(Un-Signalized)*	Eastbound	L-R	68.7	F			149.1	F	25.6	D			30.0	D
	Northbound	T-L	8.0	A			8.3	A	9.8	A			10.0	A
	OVERALL		**13.3**	**F**			**25.0**	**C**	**2.8**	**A**			**3.0**	**A**
Clapper Road at NYS Route 144 (River Road) *(Un-Signalized)*	Northbound	L	7.7	A			7.8	A	8.5	A			8.5	A
	Eastbound	L	15.1	C			17.9	C	15.1	C			15.8	C
	OVERALL		**0.7**	**A**			**0.7**	**A**	**0.5**	**A**			**0.5**	**A**
NYS Route 144 at I-87 Exit 22 Ramp *(Un-Signalized)*	Northbound	T-L	8.3	A			8.4	A	8.8	A			8.5	A
	Eastbound	L	21.1	C			565.1	F	13.2	B			52.9	F
	OVERALL		**7.5**	**A**			**63.7**	**F**	**6.2**	**A**			**10.5**	**B**

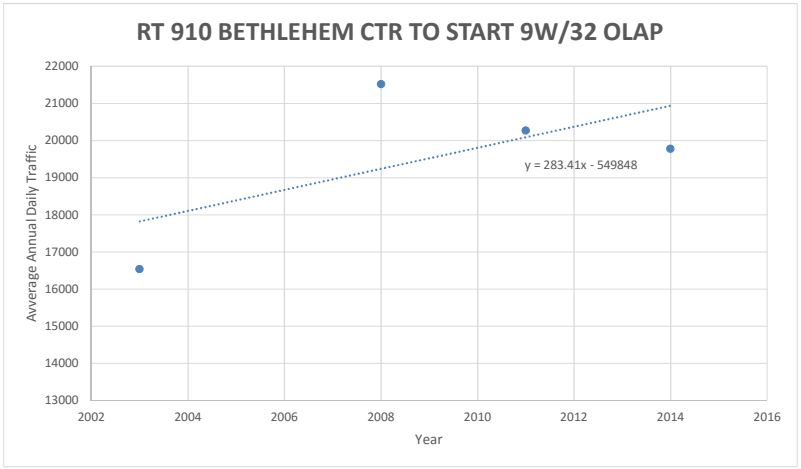
WESTBOUND SINGLE DESTINATION

Study Intersection	Approach and Movement		MORNING PEAK HOUR						EVENING PEAK HOUR					
			2029 BUILD-PHASE III		2029 BUILD- PHASE III - MITIGATION		2029 BUILD- PHASE III - TRUCK SINGLE DESTINATION		2029 BUILD-PHASE III		2029 BUILD- PHASE III - MITIGATION		2029 BUILD- PHASE III - TRUCK SINGLE DESTINATION	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
NYS Route 32 at South Port Road (Signalized)	Westbound	L	21.8	C	47.7	D	55.3	E	30.7	C	31.8	C	35.9	D
		R			18.4	B	6.8	A			1.3	A	3.4	A
	Northbound	R	15.4	B	19.2	B	44.8	D	8.5	A	5.7	A	16.3	B
	Southbound	L	158.1	F	13.5	B	46.4	D	65.2	E	4.6	A	5.7	A
		T			2.5	A	4.7	A			13.7	B	17.8	B
	OVERALL		**59.5**	**E**	**16.4**	**B**	**36.4**	**D**	**46.0**	**D**	**11.6**	**B**	**17.2**	**B**
NYS Route 144 at NYS Route 32 *(Un-Signalized/Signalized)*	Northbound	T-L	8.4	A	14.8	B	21.1	C	12.1	B	5.9	A	6.3	A
	Eastbound	L	119.9	F	31.1	C	42.4	D	60.0	F	30.3	C	30.3	C
		R	10.8	B	8.0	A	6.8	A	21.5	C	10.2	B	10.2	B
	Southbound	T-R			5.5	A	8.3	A			16.9	B	20.7	C
	OVERALL		**15.5**	**C**	**14.2**	**B**	**20.5**	**C**	**3.9**	**A**	**14.8**	**B**	**17.7**	**B**
NYS Route 32 at US Route 9W *(Signalized)*	Westbound	L	61.0	E	72.0	E	77.3	E	39.6	D			41.9	D
		R	13.1	B	14.9	B	20.7	C	18.9	B			21.4	C
	Northbound	T	60.0	E	48.8	D	74.0	E	29.3	C			30.4	C
		R	5.6	A	4.9	A	6.5	A	4.9	A			4.9	A
	Southbound	L	52.9	D	52.2	D	101.8	F	24.4	C			52.7	D
		T	4.7	A	4.0	A	3.9	A	17.8	B			17.1	B
	OVERALL		**40.6**	**D**	**34.4**	**C**	**51.9**	**D**	**23.7**	**C**			**25.4**	**C**

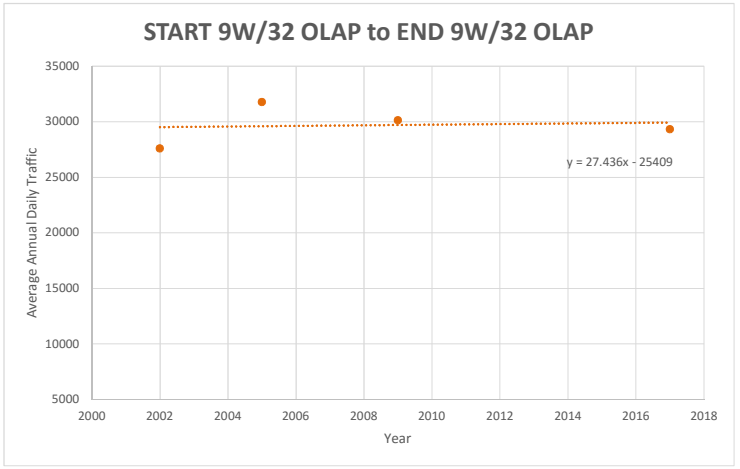
REGRESSION ANALYSIS - US 9W

RT 910A BETHLEHEM CTR to START 9W/32 OLAP	
Year	Volume
2003	16530
2008	21517
2011	20261
2014	19776

START 9W/32 OLAP to END 9W/32 OLAP	
Year	Volume
2002	27573
2005	31753
2009	30128
2017	29304



Calculated 2019 AADT = 22,357
NYSDOT 2003 AADT = 16,530
% Growth per Year = 1.875

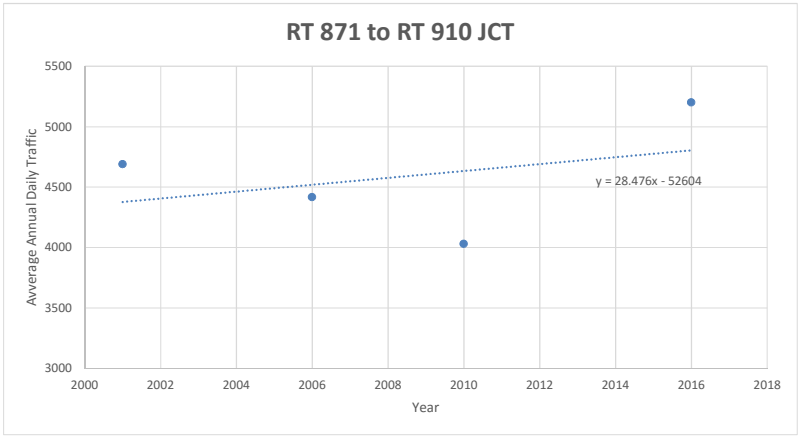


Calculated 2019 AADT = 29,984
NYSDOT 2002 AADT = 27,573
% Growth per Year = 0.49

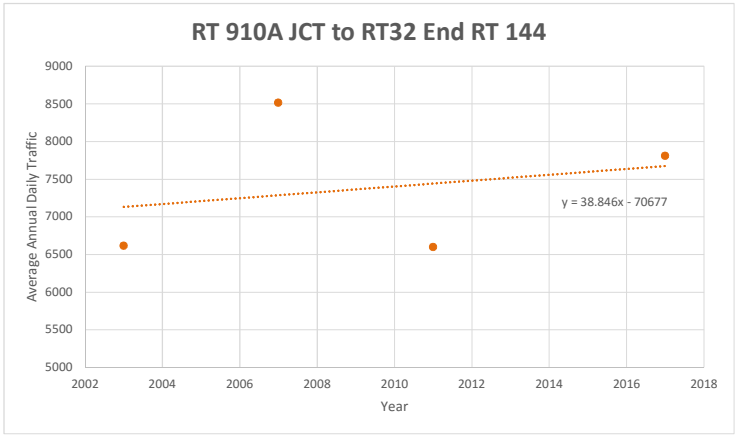
REGRESSION ANALYSIS - NYS 144

RT 871 to RT 910 JCT	
Year	Volume
2001	4688
2006	4415
2010	4030
2016	5201

RT 910A JCT to RT32 END RT 144	
Year	Volume
2003	6616
2007	8515
2011	6597
2017	7807



Calculated 2019 AADT = 4,889
NYSDOT 2001 AADT = 4,688
% Growth per Year = 0.23

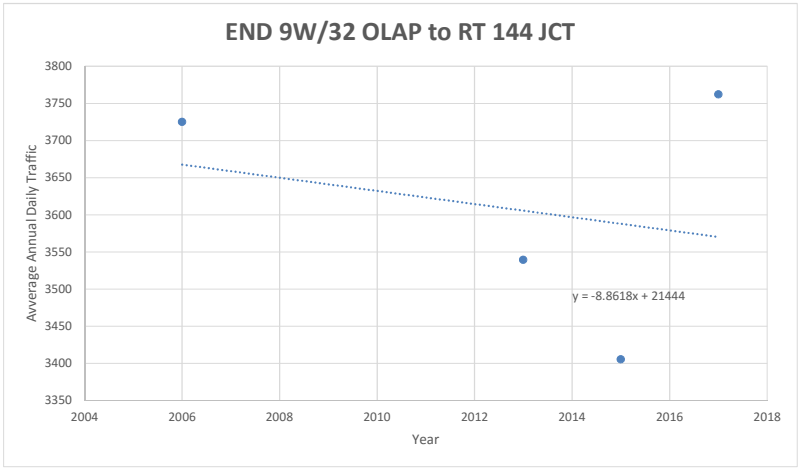


Calculated 2019 AADT = 7,753
NYSDOT 2003 AADT = 6,616
% Growth per Year = 0.99

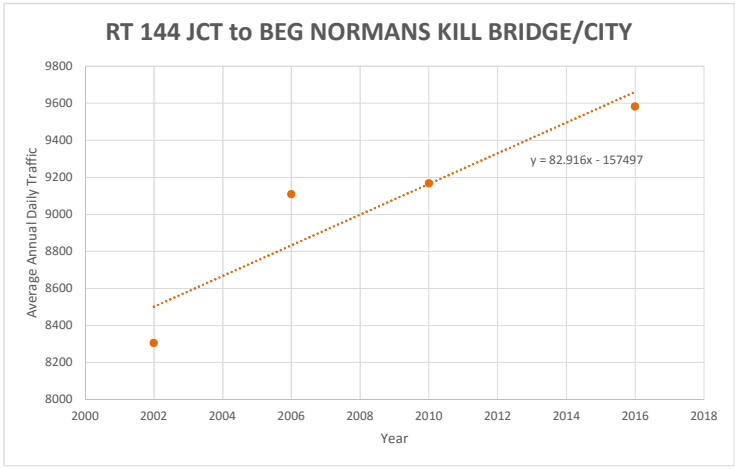
REGRESSION ANALYSIS - NY 32

END 9W/32 OLAP to RT 144 JCT	
Year	Volume
2006	3725
2013	3539
2015	3405
2017	3762

RT 144 JCT to BEG NORMANS KILL BRIDGE/CITY	
Year	Volume
2002	8304
2006	9107
2010	9167
2016	9582



Calculated 2019 AADT = 3,552
NYSDOT 2006 AADT = 3,725
% Growth per Year = -0.37



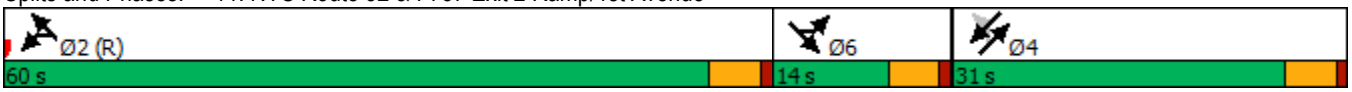
Calculated 2019 AADT = 9,910
NYSDOT 2002 AADT = 8,304
% Growth per Year = 0.96

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	3	0	29	358	51	86	7	58	0	0	94	4
Future Volume (vph)	3	0	29	358	51	86	7	58	0	0	94	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.88										
Frt		0.879			0.906						0.995	
Flt Protected		0.995		0.950				0.994				
Satd. Flow (prot)	0	1383	0	1444	1425	0	0	1644	0	0	1598	0
Flt Permitted		0.995		0.950				0.960				
Satd. Flow (perm)	0	1370	0	1444	1425	0	0	1588	0	0	1598	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		73			97						2	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		181			194			438			445	
Travel Time (s)		4.9			5.3			11.9			12.1	
Confl. Peds. (#/hr)	19		19									
Peak Hour Factor	0.82	0.82	0.82	0.89	0.89	0.89	0.91	0.91	0.91	0.78	0.78	0.78
Heavy Vehicles (%)	0%	0%	7%	25%	0%	33%	14%	15%	0%	0%	18%	25%
Adj. Flow (vph)	4	0	35	402	57	97	8	64	0	0	121	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	39	0	402	154	0	0	72	0	0	126	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Split	NA		Split	NA		Perm	NA			NA	
Protected Phases	6	6		2	2			4			4	
Permitted Phases							4					
Detector Phase	6	6		2	2		4	4			4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0			5.0	
Minimum Split (s)	14.0	14.0		24.0	24.0		24.0	24.0			24.0	
Total Split (s)	14.0	14.0		60.0	60.0		31.0	31.0			31.0	
Total Split (%)	13.3%	13.3%		57.1%	57.1%		29.5%	29.5%			29.5%	
Maximum Green (s)	9.0	9.0		55.0	55.0		26.0	26.0			26.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0			1.0	
Lost Time Adjust (s)		0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)		5.0		5.0	5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Recall Mode	None	None		C-Max	C-Max		None	None			None	
Act Effct Green (s)		5.7		75.0	75.0			13.5			13.5	

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Actuated g/C Ratio		0.05		0.71	0.71			0.13			0.13	
v/c Ratio		0.27		0.39	0.15			0.35			0.61	
Control Delay		7.6		8.9	3.3			45.2			54.5	
Queue Delay		0.0		0.0	0.0			0.0			0.0	
Total Delay		7.6		8.9	3.3			45.2			54.5	
LOS		A		A	A			D			D	
Approach Delay		7.6			7.4			45.2			54.5	
Approach LOS		A			A			D			D	
Queue Length 50th (ft)		0		108	12			45			80	
Queue Length 95th (ft)		5		200	39			85			114	
Internal Link Dist (ft)		101			114			358			365	
Turn Bay Length (ft)												
Base Capacity (vph)		185		1032	1046			393			397	
Starvation Cap Reductn		0		0	0			0			0	
Spillback Cap Reductn		0		0	0			0			0	
Storage Cap Reductn		0		0	0			0			0	
Reduced v/c Ratio		0.21		0.39	0.15			0.18			0.32	

Intersection Summary			
Area Type:	Other		
Cycle Length: 105			
Actuated Cycle Length: 105			
Offset: 0 (0%), Referenced to phase 2:NWTL, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.61			
Intersection Signal Delay: 18.3		Intersection LOS: B	
Intersection Capacity Utilization 43.7%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 11: NYS Route 32 & I-787 Exit 2 Ramp/1st Avenue



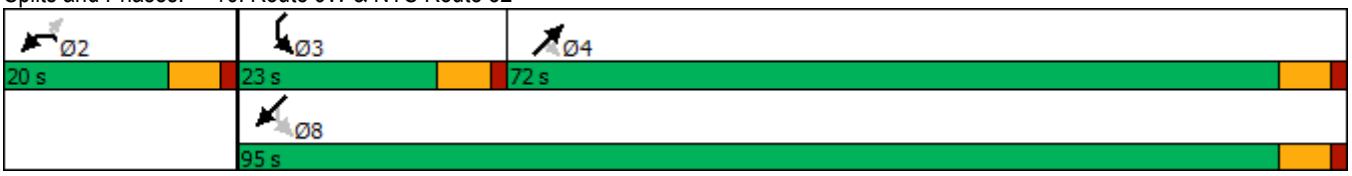
Lane Group	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Volume (vph)	89	146	1939	157	96	782
Future Volume (vph)	89	146	1939	157	96	782
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	75		200	100	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1530	1442	3505	1482	1388	3406
Flt Permitted	0.950				0.055	
Satd. Flow (perm)	1530	1442	3505	1482	80	3406
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		168		102		
Link Speed (mph)	45		45			45
Link Distance (ft)	1257		583			1004
Travel Time (s)	19.0		8.8			15.2
Peak Hour Factor	0.87	0.87	0.93	0.93	0.85	0.85
Heavy Vehicles (%)	18%	12%	3%	9%	30%	6%
Adj. Flow (vph)	102	168	2085	169	113	920
Shared Lane Traffic (%)						
Lane Group Flow (vph)	102	168	2085	169	113	920
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Turn Type	Prot	Perm	NA	Perm	pm+pt	NA
Protected Phases	2		4		3	8
Permitted Phases		2		4	8	8
Detector Phase	2	2	4	4	3	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	17.0	17.0	24.0	24.0	11.0	11.0
Total Split (s)	20.0	20.0	72.0	72.0	23.0	95.0
Total Split (%)	17.4%	17.4%	62.6%	62.6%	20.0%	82.6%
Maximum Green (s)	14.0	14.0	66.0	66.0	17.0	89.0
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	Max	None	None	None	None

Lane Group	NWL	NWR	NET	NER	SWL	SWT
Act Effct Green (s)	14.0	14.0	66.1	66.1	82.3	82.3
Actuated g/C Ratio	0.13	0.13	0.61	0.61	0.76	0.76
v/c Ratio	0.52	0.51	0.97	0.18	0.62	0.36
Control Delay	55.1	12.7	35.8	4.7	34.3	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.1	12.7	35.8	4.7	34.3	4.7
LOS	E	B	D	A	C	A
Approach Delay	28.7		33.5			7.9
Approach LOS	C		C			A
Queue Length 50th (ft)	67	0	670	17	35	92
Queue Length 95th (ft)	125	58	#1002	52	85	106
Internal Link Dist (ft)	1177		503			924
Turn Bay Length (ft)		75		200	100	
Base Capacity (vph)	198	332	2139	944	266	2803
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.51	0.97	0.18	0.42	0.33

Intersection Summary			
Area Type:	Other		
Cycle Length: 115			
Actuated Cycle Length: 108.3			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.97			
Intersection Signal Delay: 25.7		Intersection LOS: C	
Intersection Capacity Utilization 78.8%		ICU Level of Service D	
Analysis Period (min) 15			

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 16: Route 9W & NYS Route 32





Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	16	29	681	37	35	228
Future Volume (vph)	16	29	681	37	35	228
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.912		0.993			
Flt Protected	0.983					0.993
Satd. Flow (prot)	1035	0	1769	0	0	1507
Flt Permitted	0.983					0.861
Satd. Flow (perm)	1035	0	1769	0	0	1307
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	39		7			
Link Speed (mph)	30		30			30
Link Distance (ft)	421		375			362
Travel Time (s)	9.6		8.5			8.2
Peak Hour Factor	0.75	0.75	0.87	0.87	0.84	0.84
Heavy Vehicles (%)	60%	67%	6%	18%	52%	21%
Adj. Flow (vph)	21	39	783	43	42	271
Shared Lane Traffic (%)						
Lane Group Flow (vph)	60	0	826	0	0	313
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Turn Type	Perm		NA		Perm	NA
Protected Phases			2			2
Permitted Phases	8				2	
Detector Phase	8		2		2	2
Switch Phase						
Minimum Initial (s)	5.0		5.0		5.0	5.0
Minimum Split (s)	23.0		23.0		23.0	23.0
Total Split (s)	25.0		45.0		45.0	45.0
Total Split (%)	35.7%		64.3%		64.3%	64.3%
Maximum Green (s)	20.0		40.0		40.0	40.0
Yellow Time (s)	3.5		3.5		3.5	3.5
All-Red Time (s)	1.5		1.5		1.5	1.5
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	5.0		5.0			5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		Max		Max	Max
Walk Time (s)	7.0		7.0		7.0	7.0
Flash Dont Walk (s)	11.0		11.0		11.0	11.0
Pedestrian Calls (#/hr)	0		0		0	0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Act Effct Green (s)	7.6		55.9			55.9
Actuated g/C Ratio	0.11		0.84			0.84
v/c Ratio	0.39		0.56			0.29
Control Delay	22.1		5.7			3.7
Queue Delay	0.0		0.0			0.0
Total Delay	22.1		5.7			3.7
LOS	C		A			A
Approach Delay	22.1		5.7			3.7
Approach LOS	C		A			A
Queue Length 50th (ft)	9		116			31
Queue Length 95th (ft)	29		256			71
Internal Link Dist (ft)	341		295			282
Turn Bay Length (ft)						
Base Capacity (vph)	340		1484			1096
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.18		0.56			0.29

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 66.7			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.56			
Intersection Signal Delay: 6.0		Intersection LOS: A	
Intersection Capacity Utilization 54.1%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 20: NYS Route 32 & South Port Road



Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBR	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	56	172	303	316	53	122
Future Vol, veh/h	56	172	303	316	53	122
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	Yield
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	91	91	88	88
Heavy Vehicles, %	9	20	10	10	18	17
Mvmt Flow	62	191	333	347	60	139

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1143	130	60	0	-	0
Stage 1	130	-	-	-	-	-
Stage 2	1013	-	-	-	-	-
Critical Hdwy	6.49	6.4	4.2	-	-	-
Critical Hdwy Stg 1	5.49	-	-	-	-	-
Critical Hdwy Stg 2	5.49	-	-	-	-	-
Follow-up Hdwy	3.581	3.48	2.29	-	-	-
Pot Cap-1 Maneuver	214	874	1494	-	-	-
Stage 1	879	-	-	-	-	-
Stage 2	340	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	155	874	1494	-	-	-
Mov Cap-2 Maneuver	155	-	-	-	-	-
Stage 1	636	-	-	-	-	-
Stage 2	340	-	-	-	-	-

Approach	EB	NE	SW
HCM Control Delay, s	14.5	4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NEL	NET	EBLn1	SWT	SWR
Capacity (veh/h)	1494	-	631	-	-
HCM Lane V/C Ratio	0.223	-	0.401	-	-
HCM Control Delay (s)	8.1	0	14.5	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.9	-	1.9	-	-

Intersection	
Int Delay, s/veh	7.7

Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	18	514	166	59	162	16
Future Vol, veh/h	18	514	166	59	162	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	81	81	83	83
Heavy Vehicles, %	3	0	22	10	12	11
Mvmt Flow	21	612	205	73	195	19

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	278	0	-	0	896	242
Stage 1	-	-	-	-	242	-
Stage 2	-	-	-	-	654	-
Critical Hdwy	4.13	-	-	-	6.52	6.31
Critical Hdwy Stg 1	-	-	-	-	5.52	-
Critical Hdwy Stg 2	-	-	-	-	5.52	-
Follow-up Hdwy	2.227	-	-	-	3.608	3.399
Pot Cap-1 Maneuver	1279	-	-	-	298	775
Stage 1	-	-	-	-	775	-
Stage 2	-	-	-	-	499	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1279	-	-	-	291	775
Mov Cap-2 Maneuver	-	-	-	-	291	-
Stage 1	-	-	-	-	756	-
Stage 2	-	-	-	-	499	-

Approach	NB	SB	NE
HCM Control Delay, s	0.3	0	39.6
HCM LOS			E

Minor Lane/Major Mvmt	NELn1	NBL	NBT	SBT	SBR
Capacity (veh/h)	308	1279	-	-	-
HCM Lane V/C Ratio	0.696	0.017	-	-	-
HCM Control Delay (s)	39.6	7.9	0	-	-
HCM Lane LOS	E	A	A	-	-
HCM 95th %tile Q(veh)	4.9	0.1	-	-	-

Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	97	46	53	621	195	49
Future Vol, veh/h	97	46	53	621	195	49
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	125	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	86	86	90	90
Heavy Vehicles, %	13	28	20	9	23	28
Mvmt Flow	111	53	62	722	217	54

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1090	244	271	0	-	0
Stage 1	244	-	-	-	-	-
Stage 2	846	-	-	-	-	-
Critical Hdwy	6.53	6.48	4.3	-	-	-
Critical Hdwy Stg 1	5.53	-	-	-	-	-
Critical Hdwy Stg 2	5.53	-	-	-	-	-
Follow-up Hdwy	3.617	3.552	2.38	-	-	-
Pot Cap-1 Maneuver	227	735	1195	-	-	-
Stage 1	771	-	-	-	-	-
Stage 2	403	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	207	735	1195	-	-	-
Mov Cap-2 Maneuver	207	-	-	-	-	-
Stage 1	704	-	-	-	-	-
Stage 2	403	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	31.1	0.6	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1195	-	207	735	-	-
HCM Lane V/C Ratio	0.052	-	0.539	0.072	-	-
HCM Control Delay (s)	8.2	0	41	10.3	-	-
HCM Lane LOS	A	A	E	B	-	-
HCM 95th %tile Q(veh)	0.2	-	2.8	0.2	-	-

Intersection	
Int Delay, s/veh	6.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	106	6	40	38	41	50
Future Vol, veh/h	106	6	40	38	41	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	0	50	-	-	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	65	65	84	84	62	62
Heavy Vehicles, %	25	17	42	42	0	25
Mvmt Flow	163	9	48	45	66	81

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	284	71	0	0	93	0
Stage 1	71	-	-	-	-	-
Stage 2	213	-	-	-	-	-
Critical Hdwy	6.65	6.37	-	-	4.1	-
Critical Hdwy Stg 1	5.65	-	-	-	-	-
Critical Hdwy Stg 2	5.65	-	-	-	-	-
Follow-up Hdwy	3.725	3.453	-	-	2.2	-
Pot Cap-1 Maneuver	660	951	-	-	1514	-
Stage 1	897	-	-	-	-	-
Stage 2	771	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	631	951	-	-	1514	-
Mov Cap-2 Maneuver	631	-	-	-	-	-
Stage 1	897	-	-	-	-	-
Stage 2	737	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.5	0	3.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	631	951	1514	-
HCM Lane V/C Ratio	-	-	0.258	0.01	0.044	-
HCM Control Delay (s)	-	-	12.7	8.8	7.5	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	1	0	0.1	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	14	3	449	150	1
Future Vol, veh/h	5	14	3	449	150	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	42	81	75	72	93	25
Heavy Vehicles, %	0	8	0	8	20	0
Mvmt Flow	12	17	4	624	161	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	795	163	165	0	-	0
Stage 1	163	-	-	-	-	-
Stage 2	632	-	-	-	-	-
Critical Hdwy	6.4	6.28	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.372	2.2	-	-	-
Pot Cap-1 Maneuver	359	866	1426	-	-	-
Stage 1	871	-	-	-	-	-
Stage 2	534	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	358	866	1426	-	-	-
Mov Cap-2 Maneuver	358	-	-	-	-	-
Stage 1	868	-	-	-	-	-
Stage 2	534	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.9	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1426	-	549	-	-
HCM Lane V/C Ratio	0.003	-	0.053	-	-
HCM Control Delay (s)	7.5	0	11.9	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	2	0	44	834	96	57	5	58	0	0	193	8
Future Volume (vph)	2	0	44	834	96	57	5	58	0	0	193	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.87										
Frt		0.871			0.944						0.994	
Flt Protected		0.998		0.950				0.996				
Satd. Flow (prot)	0	1359	0	1719	1755	0	0	1690	0	0	1715	0
Flt Permitted		0.998		0.950				0.972				
Satd. Flow (perm)	0	1353	0	1719	1755	0	0	1649	0	0	1715	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		73			43						2	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		181			194			438			445	
Travel Time (s)		4.9			5.3			11.9			12.1	
Confl. Peds. (#/hr)	19		19									
Peak Hour Factor	0.73	0.73	0.73	0.90	0.90	0.90	0.83	0.83	0.83	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	7%	5%	0%	6%	0%	13%	0%	0%	10%	13%
Adj. Flow (vph)	3	0	60	927	107	63	6	70	0	0	210	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	63	0	927	170	0	0	76	0	0	219	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Split	NA		Split	NA		Perm	NA			NA	
Protected Phases	6	6		2	2			4			4	
Permitted Phases							4					
Detector Phase	6	6		2	2		4	4			4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0			5.0	
Minimum Split (s)	14.0	14.0		24.0	24.0		24.0	24.0			24.0	
Total Split (s)	14.0	14.0		61.0	61.0		30.0	30.0			30.0	
Total Split (%)	13.3%	13.3%		58.1%	58.1%		28.6%	28.6%			28.6%	
Maximum Green (s)	9.0	9.0		56.0	56.0		25.0	25.0			25.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0			1.0	
Lost Time Adjust (s)		0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)		5.0		5.0	5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Recall Mode	None	None		C-Max	C-Max		None	None			None	
Act Effct Green (s)		6.4		67.2	67.2			18.5			18.5	

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Actuated g/C Ratio		0.06		0.64	0.64			0.18			0.18	
v/c Ratio		0.42		0.84	0.15			0.26			0.73	
Control Delay		17.6		26.5	7.6			37.9			53.7	
Queue Delay		0.0		0.0	0.0			0.0			0.0	
Total Delay		17.6		26.5	7.6			37.9			53.7	
LOS		B		C	A			D			D	
Approach Delay		17.6			23.5			37.9			53.7	
Approach LOS		B			C			D			D	
Queue Length 50th (ft)		0		461	31			45			139	
Queue Length 95th (ft)		18		#898	77			74			206	
Internal Link Dist (ft)		101			114			358			365	
Turn Bay Length (ft)												
Base Capacity (vph)		183		1100	1139			392			409	
Starvation Cap Reductn		0		0	0			0			0	
Spillback Cap Reductn		0		0	0			0			0	
Storage Cap Reductn		0		0	0			0			0	
Reduced v/c Ratio		0.34		0.84	0.15			0.19			0.54	

Intersection Summary			
Area Type:	Other		
Cycle Length: 105			
Actuated Cycle Length: 105			
Offset: 0 (0%), Referenced to phase 2:NWTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay: 28.6		Intersection LOS: C	
Intersection Capacity Utilization 71.8%		ICU Level of Service C	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 11: NYS Route 32 & I-787 Exit 2 Ramp/1st Avenue

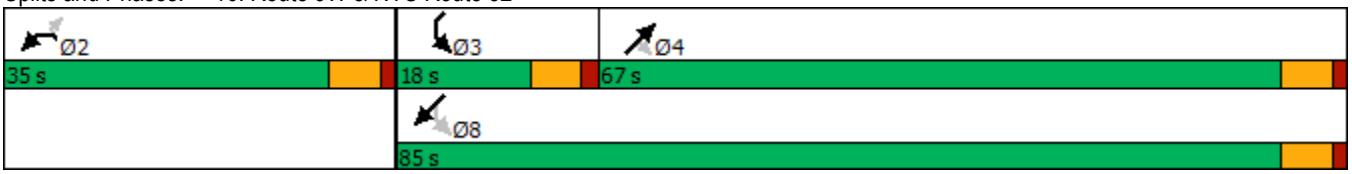


Lane Group	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Volume (vph)	278	95	1030	88	84	1371
Future Volume (vph)	278	95	1030	88	84	1371
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	75		200	100	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1719	1455	3471	1509	1583	3539
Flt Permitted	0.950				0.104	
Satd. Flow (perm)	1719	1455	3471	1509	173	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		54		89		
Link Speed (mph)	45		45			45
Link Distance (ft)	1257		583			1004
Travel Time (s)	19.0		8.8			15.2
Peak Hour Factor	0.91	0.91	0.91	0.91	0.94	0.94
Heavy Vehicles (%)	5%	11%	4%	7%	14%	2%
Adj. Flow (vph)	305	104	1132	97	89	1459
Shared Lane Traffic (%)						
Lane Group Flow (vph)	305	104	1132	97	89	1459
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Turn Type	Prot	Perm	NA	Perm	pm+pt	NA
Protected Phases	2		4		3	8
Permitted Phases		2		4	8	8
Detector Phase	2	2	4	4	3	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	17.0	17.0	24.0	24.0	11.0	24.0
Total Split (s)	35.0	35.0	67.0	67.0	18.0	85.0
Total Split (%)	29.2%	29.2%	55.8%	55.8%	15.0%	70.8%
Maximum Green (s)	29.0	29.0	61.0	61.0	12.0	79.0
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	Max	None	None	None	None

Lane Group	NWL	NWR	NET	NER	SWL	SWT
Act Effct Green (s)	29.6	29.6	39.6	39.6	50.5	50.5
Actuated g/C Ratio	0.32	0.32	0.43	0.43	0.55	0.55
v/c Ratio	0.55	0.21	0.76	0.14	0.41	0.75
Control Delay	33.6	16.2	26.6	4.8	14.9	18.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.6	16.2	26.6	4.8	14.9	18.3
LOS	C	B	C	A	B	B
Approach Delay	29.2		24.9			18.1
Approach LOS	C		C			B
Queue Length 50th (ft)	150	21	300	3	23	317
Queue Length 95th (ft)	289	71	388	31	43	390
Internal Link Dist (ft)	1177		503			924
Turn Bay Length (ft)		75		200	100	
Base Capacity (vph)	550	502	2338	1045	281	3024
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.21	0.48	0.09	0.32	0.48

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 92.3			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 22.1		Intersection LOS: C	
Intersection Capacity Utilization 63.5%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 16: Route 9W & NYS Route 32





Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	68	12	226	13	5	883
Future Volume (vph)	68	12	226	13	5	883
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.980		0.993			
Flt Protected	0.959					
Satd. Flow (prot)	1651	0	1711	0	0	1806
Flt Permitted	0.959					0.999
Satd. Flow (perm)	1651	0	1711	0	0	1805
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	13		7			
Link Speed (mph)	30		30			30
Link Distance (ft)	421		375			362
Travel Time (s)	9.6		8.5			8.2
Peak Hour Factor	0.85	0.85	0.72	0.72	0.94	0.94
Heavy Vehicles (%)	8%	9%	8%	50%	40%	5%
Adj. Flow (vph)	80	14	314	18	5	939
Shared Lane Traffic (%)						
Lane Group Flow (vph)	94	0	332	0	0	944
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Turn Type	Perm		NA		Perm	NA
Protected Phases			2			2
Permitted Phases	8				2	
Detector Phase	8		2		2	2
Switch Phase						
Minimum Initial (s)	5.0		5.0		5.0	5.0
Minimum Split (s)	23.0		23.0		23.0	23.0
Total Split (s)	25.0		45.0		45.0	45.0
Total Split (%)	35.7%		64.3%		64.3%	64.3%
Maximum Green (s)	20.0		40.0		40.0	40.0
Yellow Time (s)	3.5		3.5		3.5	3.5
All-Red Time (s)	1.5		1.5		1.5	1.5
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	5.0		5.0			5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		Max		Max	Max
Walk Time (s)	7.0		7.0		7.0	7.0
Flash Dont Walk (s)	11.0		11.0		11.0	11.0
Pedestrian Calls (#/hr)	0		0		0	0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Act Effct Green (s)	8.7		51.5			51.5
Actuated g/C Ratio	0.13		0.77			0.77
v/c Ratio	0.42		0.25			0.68
Control Delay	28.6		4.0			9.5
Queue Delay	0.0		0.0			0.0
Total Delay	28.6		4.0			9.5
LOS	C		A			A
Approach Delay	28.6		4.0			9.5
Approach LOS	C		A			A
Queue Length 50th (ft)	34		36			178
Queue Length 95th (ft)	59		56			#395
Internal Link Dist (ft)	341		295			282
Turn Bay Length (ft)						
Base Capacity (vph)	506		1320			1391
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.19		0.25			0.68

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 66.8			
Natural Cycle: 65			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay: 9.5		Intersection LOS: A	
Intersection Capacity Utilization 63.3%		ICU Level of Service B	
Analysis Period (min) 15			

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 20: NYS Route 32 & South Port Road



Intersection	
Int Delay, s/veh	6

Movement	EBL	EBR	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	63	265	159	108	209	79
Future Vol, veh/h	63	265	159	108	209	79
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	Yield
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	74	74	85	85
Heavy Vehicles, %	12	3	9	8	4	8
Mvmt Flow	77	323	215	146	246	93

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	869	293	246	0	-	0
Stage 1	293	-	-	-	-	-
Stage 2	576	-	-	-	-	-
Critical Hdwy	6.52	6.23	4.19	-	-	-
Critical Hdwy Stg 1	5.52	-	-	-	-	-
Critical Hdwy Stg 2	5.52	-	-	-	-	-
Follow-up Hdwy	3.608	3.327	2.281	-	-	-
Pot Cap-1 Maneuver	310	744	1280	-	-	-
Stage 1	735	-	-	-	-	-
Stage 2	543	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	253	744	1280	-	-	-
Mov Cap-2 Maneuver	253	-	-	-	-	-
Stage 1	600	-	-	-	-	-
Stage 2	543	-	-	-	-	-

Approach	EB	NE	SW
HCM Control Delay, s	11.9	5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NEL	NET	EBLn1	SWT	SWR
Capacity (veh/h)	1280	-	921	-	-
HCM Lane V/C Ratio	0.168	-	0.434	-	-
HCM Control Delay (s)	8.4	0	11.9	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.6	-	2.2	-	-

Intersection	
Int Delay, s/veh	2.2

Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	21	178	383	271	56	32
Future Vol, veh/h	21	178	383	271	56	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	77	77	84	84	81	81
Heavy Vehicles, %	4	0	0	5	5	1
Mvmt Flow	27	231	456	323	69	40

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	779	0	-	0	903	618
Stage 1	-	-	-	-	618	-
Stage 2	-	-	-	-	285	-
Critical Hdwy	4.14	-	-	-	6.45	6.21
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	2.236	-	-	-	3.545	3.309
Pot Cap-1 Maneuver	829	-	-	-	304	491
Stage 1	-	-	-	-	532	-
Stage 2	-	-	-	-	757	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	829	-	-	-	293	491
Mov Cap-2 Maneuver	-	-	-	-	293	-
Stage 1	-	-	-	-	512	-
Stage 2	-	-	-	-	757	-

Approach	NB	SB	NE
HCM Control Delay, s	1	0	20.3
HCM LOS			C

Minor Lane/Major Mvmt	NELn1	NBL	NBT	SBT	SBR
Capacity (veh/h)	343	829	-	-	-
HCM Lane V/C Ratio	0.317	0.033	-	-	-
HCM Control Delay (s)	20.3	9.5	0	-	-
HCM Lane LOS	C	A	A	-	-
HCM 95th %tile Q(veh)	1.3	0.1	-	-	-

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	29	65	42	210	637	314
Future Vol, veh/h	29	65	42	210	637	314
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	125	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	88	88	91	91
Heavy Vehicles, %	29	14	10	7	7	2
Mvmt Flow	32	71	48	239	700	345

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1208	873	1045	0	-	0
Stage 1	873	-	-	-	-	-
Stage 2	335	-	-	-	-	-
Critical Hdwy	6.69	6.34	4.2	-	-	-
Critical Hdwy Stg 1	5.69	-	-	-	-	-
Critical Hdwy Stg 2	5.69	-	-	-	-	-
Follow-up Hdwy	3.761	3.426	2.29	-	-	-
Pot Cap-1 Maneuver	179	333	636	-	-	-
Stage 1	367	-	-	-	-	-
Stage 2	668	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	163	333	636	-	-	-
Mov Cap-2 Maneuver	163	-	-	-	-	-
Stage 1	335	-	-	-	-	-
Stage 2	668	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	22.9	1.9	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	636	-	163	333	-	-
HCM Lane V/C Ratio	0.075	-	0.193	0.212	-	-
HCM Control Delay (s)	11.1	0	32.3	18.7	-	-
HCM Lane LOS	B	A	D	C	-	-
HCM 95th %tile Q(veh)	0.2	-	0.7	0.8	-	-

Intersection	
Int Delay, s/veh	3.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	57	31	83	91	15	58
Future Vol, veh/h	57	31	83	91	15	58
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	0	50	-	-	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	83	83	84	84	78	78
Heavy Vehicles, %	26	10	25	13	0	37
Mvmt Flow	69	37	99	108	19	74

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	265	153	0	0	207	0
Stage 1	153	-	-	-	-	-
Stage 2	112	-	-	-	-	-
Critical Hdwy	6.66	6.3	-	-	4.1	-
Critical Hdwy Stg 1	5.66	-	-	-	-	-
Critical Hdwy Stg 2	5.66	-	-	-	-	-
Follow-up Hdwy	3.734	3.39	-	-	2.2	-
Pot Cap-1 Maneuver	675	872	-	-	1376	-
Stage 1	820	-	-	-	-	-
Stage 2	856	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	666	872	-	-	1376	-
Mov Cap-2 Maneuver	666	-	-	-	-	-
Stage 1	820	-	-	-	-	-
Stage 2	844	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.4	0	1.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	666	872	1376	-
HCM Lane V/C Ratio	-	-	0.103	0.043	0.014	-
HCM Control Delay (s)	-	-	11	9.3	7.7	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0.1	0	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	2	5	168	387	5
Future Vol, veh/h	4	2	5	168	387	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	50	50	30	80	88	63
Heavy Vehicles, %	0	0	0	7	4	0
Mvmt Flow	8	4	17	210	440	8

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	688	444	448	0	-	0
Stage 1	444	-	-	-	-	-
Stage 2	244	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	415	618	1123	-	-	-
Stage 1	651	-	-	-	-	-
Stage 2	801	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	408	618	1123	-	-	-
Mov Cap-2 Maneuver	408	-	-	-	-	-
Stage 1	640	-	-	-	-	-
Stage 2	801	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13	0.6	0
HCM LOS	B		

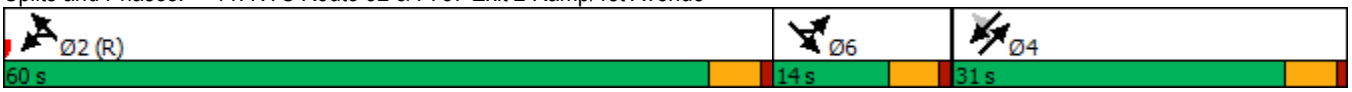
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1123	-	460	-	-
HCM Lane V/C Ratio	0.015	-	0.026	-	-
HCM Control Delay (s)	8.3	0	13	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	3	0	30	395	53	90	8	61	0	0	99	4
Future Volume (vph)	3	0	30	395	53	90	8	61	0	0	99	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.88										
Frt		0.878			0.906						0.995	
Flt Protected		0.995		0.950				0.994				
Satd. Flow (prot)	0	1380	0	1444	1426	0	0	1644	0	0	1599	0
Flt Permitted		0.995		0.950				0.957				
Satd. Flow (perm)	0	1368	0	1444	1426	0	0	1583	0	0	1599	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		73			101						2	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		181			194			438			445	
Travel Time (s)		4.9			5.3			11.9			12.1	
Confl. Peds. (#/hr)	19		19									
Peak Hour Factor	0.82	0.82	0.82	0.89	0.89	0.89	0.91	0.91	0.91	0.78	0.78	0.78
Heavy Vehicles (%)	0%	0%	7%	25%	0%	33%	14%	15%	0%	0%	18%	25%
Adj. Flow (vph)	4	0	37	444	60	101	9	67	0	0	127	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	41	0	444	161	0	0	76	0	0	132	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Split	NA		Split	NA		Perm	NA			NA	
Protected Phases	6	6		2	2			4			4	
Permitted Phases							4					
Detector Phase	6	6		2	2		4	4			4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0			5.0	
Minimum Split (s)	14.0	14.0		24.0	24.0		24.0	24.0			24.0	
Total Split (s)	14.0	14.0		60.0	60.0		31.0	31.0			31.0	
Total Split (%)	13.3%	13.3%		57.1%	57.1%		29.5%	29.5%			29.5%	
Maximum Green (s)	9.0	9.0		55.0	55.0		26.0	26.0			26.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0			1.0	
Lost Time Adjust (s)		0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)		5.0		5.0	5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Recall Mode	None	None		C-Max	C-Max		None	None			None	
Act Effct Green (s)		5.7		74.6	74.6			13.9			13.9	

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Actuated g/C Ratio		0.05		0.71	0.71			0.13			0.13	
v/c Ratio		0.28		0.43	0.15			0.37			0.62	
Control Delay		8.4		9.7	3.4			45.1			54.5	
Queue Delay		0.0		0.0	0.0			0.0			0.0	
Total Delay		8.4		9.7	3.4			45.1			54.5	
LOS		A		A	A			D			D	
Approach Delay		8.4			8.0			45.1			54.5	
Approach LOS		A			A			D			D	
Queue Length 50th (ft)		0		127	12			47			84	
Queue Length 95th (ft)		7		234	41			88			118	
Internal Link Dist (ft)		101			114			358			365	
Turn Bay Length (ft)												
Base Capacity (vph)		185		1025	1042			391			397	
Starvation Cap Reductn		0		0	0			0			0	
Spillback Cap Reductn		0		0	0			0			0	
Storage Cap Reductn		0		0	0			0			0	
Reduced v/c Ratio		0.22		0.43	0.15			0.19			0.33	

Intersection Summary			
Area Type:	Other		
Cycle Length: 105			
Actuated Cycle Length: 105			
Offset: 0 (0%), Referenced to phase 2:NWTL, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.62			
Intersection Signal Delay: 18.5		Intersection LOS: B	
Intersection Capacity Utilization 46.8%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 11: NYS Route 32 & I-787 Exit 2 Ramp/1st Avenue



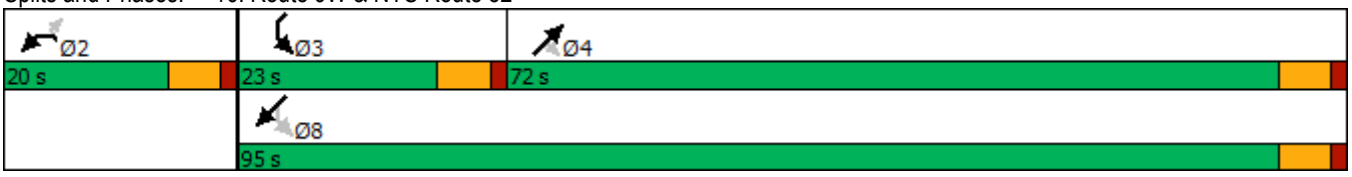
Lane Group	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Volume (vph)	93	153	2035	165	101	821
Future Volume (vph)	93	153	2035	165	101	821
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	75		200	100	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1530	1442	3505	1482	1388	3406
Flt Permitted	0.950				0.055	
Satd. Flow (perm)	1530	1442	3505	1482	80	3406
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		176		102		
Link Speed (mph)	45		45			45
Link Distance (ft)	1257		583			1004
Travel Time (s)	19.0		8.8			15.2
Peak Hour Factor	0.87	0.87	0.93	0.93	0.85	0.85
Heavy Vehicles (%)	18%	12%	3%	9%	30%	6%
Adj. Flow (vph)	107	176	2188	177	119	966
Shared Lane Traffic (%)						
Lane Group Flow (vph)	107	176	2188	177	119	966
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Turn Type	Prot	Perm	NA	Perm	pm+pt	NA
Protected Phases	2		4		3	8
Permitted Phases		2		4	8	8
Detector Phase	2	2	4	4	3	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	17.0	17.0	24.0	24.0	11.0	11.0
Total Split (s)	20.0	20.0	72.0	72.0	23.0	95.0
Total Split (%)	17.4%	17.4%	62.6%	62.6%	20.0%	82.6%
Maximum Green (s)	14.0	14.0	66.0	66.0	17.0	89.0
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	Max	None	None	None	None

Lane Group	NWL	NWR	NET	NER	SWL	SWT
Act Effct Green (s)	14.0	14.0	66.1	66.1	82.7	82.7
Actuated g/C Ratio	0.13	0.13	0.61	0.61	0.76	0.76
v/c Ratio	0.54	0.52	1.03	0.19	0.63	0.37
Control Delay	56.5	12.8	49.3	5.1	36.0	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.5	12.8	49.3	5.1	36.0	4.8
LOS	E	B	D	A	D	A
Approach Delay	29.3		46.0			8.2
Approach LOS	C		D			A
Queue Length 50th (ft)	70	0	~851	20	40	98
Queue Length 95th (ft)	131	58	#1095	56	91	113
Internal Link Dist (ft)	1177		503			924
Turn Bay Length (ft)		75		200	100	
Base Capacity (vph)	197	339	2130	941	265	2792
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.52	1.03	0.19	0.45	0.35

Intersection Summary

Area Type: Other
Cycle Length: 115
Actuated Cycle Length: 108.7
Natural Cycle: 90
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.03
Intersection Signal Delay: 33.7 Intersection LOS: C
Intersection Capacity Utilization 82.0% ICU Level of Service E
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 16: Route 9W & NYS Route 32





Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	17	30	717	39	37	258
Future Volume (vph)	17	30	717	39	37	258
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.914		0.993			
Flt Protected	0.982					0.994
Satd. Flow (prot)	1037	0	1770	0	0	1512
Flt Permitted	0.982					0.859
Satd. Flow (perm)	1037	0	1770	0	0	1307
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	40		7			
Link Speed (mph)	30		30			30
Link Distance (ft)	421		375			362
Travel Time (s)	9.6		8.5			8.2
Peak Hour Factor	0.75	0.75	0.87	0.87	0.84	0.84
Heavy Vehicles (%)	60%	67%	6%	18%	52%	21%
Adj. Flow (vph)	23	40	824	45	44	307
Shared Lane Traffic (%)						
Lane Group Flow (vph)	63	0	869	0	0	351
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Turn Type	Perm		NA		Perm	NA
Protected Phases			2			2
Permitted Phases	8				2	
Detector Phase	8		2		2	2
Switch Phase						
Minimum Initial (s)	5.0		5.0		5.0	5.0
Minimum Split (s)	23.0		23.0		23.0	23.0
Total Split (s)	25.0		45.0		45.0	45.0
Total Split (%)	35.7%		64.3%		64.3%	64.3%
Maximum Green (s)	20.0		40.0		40.0	40.0
Yellow Time (s)	3.5		3.5		3.5	3.5
All-Red Time (s)	1.5		1.5		1.5	1.5
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	5.0		5.0			5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		Max		Max	Max
Walk Time (s)	7.0		7.0		7.0	7.0
Flash Dont Walk (s)	11.0		11.0		11.0	11.0
Pedestrian Calls (#/hr)	0		0		0	0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Act Effct Green (s)	7.7		55.7			55.7
Actuated g/C Ratio	0.12		0.84			0.84
v/c Ratio	0.41		0.59			0.32
Control Delay	22.3		6.3			4.0
Queue Delay	0.0		0.0			0.0
Total Delay	22.3		6.3			4.0
LOS	C		A			A
Approach Delay	22.3		6.3			4.0
Approach LOS	C		A			A
Queue Length 50th (ft)	10		129			37
Queue Length 95th (ft)	30		289			84
Internal Link Dist (ft)	341		295			282
Turn Bay Length (ft)						
Base Capacity (vph)	341		1481			1093
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.18		0.59			0.32

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 66.6			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.59			
Intersection Signal Delay: 6.5		Intersection LOS: A	
Intersection Capacity Utilization 57.3%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 20: NYS Route 32 & South Port Road



Intersection	
Int Delay, s/veh	6.4

Movement	EBL	EBR	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	59	229	325	333	75	128
Future Vol, veh/h	59	229	325	333	75	128
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	Yield
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	91	91	88	88
Heavy Vehicles, %	9	20	10	10	18	17
Mvmt Flow	66	254	357	366	85	145

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1238	158	85	0	-	0
Stage 1	158	-	-	-	-	-
Stage 2	1080	-	-	-	-	-
Critical Hdwy	6.49	6.4	4.2	-	-	-
Critical Hdwy Stg 1	5.49	-	-	-	-	-
Critical Hdwy Stg 2	5.49	-	-	-	-	-
Follow-up Hdwy	3.581	3.48	2.29	-	-	-
Pot Cap-1 Maneuver	188	842	1462	-	-	-
Stage 1	854	-	-	-	-	-
Stage 2	316	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	130	842	1462	-	-	-
Mov Cap-2 Maneuver	130	-	-	-	-	-
Stage 1	593	-	-	-	-	-
Stage 2	316	-	-	-	-	-

Approach	EB	NE	SW
HCM Control Delay, s	16.3	4.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NEL	NET	EBLn1	SWT	SWR
Capacity (veh/h)	1462	-	635	-	-
HCM Lane V/C Ratio	0.244	-	0.504	-	-
HCM Control Delay (s)	8.3	0	16.3	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	1	-	2.8	-	-

Intersection	
Int Delay, s/veh	10.6

Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	19	541	194	62	170	17
Future Vol, veh/h	19	541	194	62	170	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	81	81	83	83
Heavy Vehicles, %	3	0	22	10	12	11
Mvmt Flow	23	644	240	77	205	20

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	317	0	-	0	969	279
Stage 1	-	-	-	-	279	-
Stage 2	-	-	-	-	690	-
Critical Hdwy	4.13	-	-	-	6.52	6.31
Critical Hdwy Stg 1	-	-	-	-	5.52	-
Critical Hdwy Stg 2	-	-	-	-	5.52	-
Follow-up Hdwy	2.227	-	-	-	3.608	3.399
Pot Cap-1 Maneuver	1237	-	-	-	270	739
Stage 1	-	-	-	-	746	-
Stage 2	-	-	-	-	480	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1237	-	-	-	262	739
Mov Cap-2 Maneuver	-	-	-	-	262	-
Stage 1	-	-	-	-	724	-
Stage 2	-	-	-	-	480	-

Approach	NB	SB	NE
HCM Control Delay, s	0.3	0	56.2
HCM LOS			F

Minor Lane/Major Mvmt	NELn1	NBL	NBT	SBT	SBR
Capacity (veh/h)	278	1237	-	-	-
HCM Lane V/C Ratio	0.81	0.018	-	-	-
HCM Control Delay (s)	56.2	8	0	-	-
HCM Lane LOS	F	A	A	-	-
HCM 95th %tile Q(veh)	6.5	0.1	-	-	-

Intersection	
Int Delay, s/veh	5.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	102	48	56	654	224	51
Future Vol, veh/h	102	48	56	654	224	51
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	125	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	86	86	90	90
Heavy Vehicles, %	13	28	20	9	23	28
Mvmt Flow	117	55	65	760	249	57

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1168	278	306	0	-	0
Stage 1	278	-	-	-	-	-
Stage 2	890	-	-	-	-	-
Critical Hdwy	6.53	6.48	4.3	-	-	-
Critical Hdwy Stg 1	5.53	-	-	-	-	-
Critical Hdwy Stg 2	5.53	-	-	-	-	-
Follow-up Hdwy	3.617	3.552	2.38	-	-	-
Pot Cap-1 Maneuver	203	703	1159	-	-	-
Stage 1	744	-	-	-	-	-
Stage 2	384	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	183	703	1159	-	-	-
Mov Cap-2 Maneuver	183	-	-	-	-	-
Stage 1	672	-	-	-	-	-
Stage 2	384	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	40.3	0.7	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1159	-	183	703	-	-
HCM Lane V/C Ratio	0.056	-	0.641	0.078	-	-
HCM Control Delay (s)	8.3	0	54.3	10.6	-	-
HCM Lane LOS	A	A	F	B	-	-
HCM 95th %tile Q(veh)	0.2	-	3.7	0.3	-	-

Intersection	
Int Delay, s/veh	6.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	111	7	42	40	43	52
Future Vol, veh/h	111	7	42	40	43	52
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	0	50	-	-	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	65	65	84	84	62	62
Heavy Vehicles, %	25	17	42	42	0	25
Mvmt Flow	171	11	50	48	69	84

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	296	74	0	0	98	0
Stage 1	74	-	-	-	-	-
Stage 2	222	-	-	-	-	-
Critical Hdwy	6.65	6.37	-	-	4.1	-
Critical Hdwy Stg 1	5.65	-	-	-	-	-
Critical Hdwy Stg 2	5.65	-	-	-	-	-
Follow-up Hdwy	3.725	3.453	-	-	2.2	-
Pot Cap-1 Maneuver	649	947	-	-	1508	-
Stage 1	894	-	-	-	-	-
Stage 2	763	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	619	947	-	-	1508	-
Mov Cap-2 Maneuver	619	-	-	-	-	-
Stage 1	894	-	-	-	-	-
Stage 2	728	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.8	0	3.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	619	947	1508	-
HCM Lane V/C Ratio	-	-	0.276	0.011	0.046	-
HCM Control Delay (s)	-	-	13	8.8	7.5	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	1.1	0	0.1	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	14	3	474	177	1
Future Vol, veh/h	6	14	3	474	177	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	42	81	75	72	93	25
Heavy Vehicles, %	0	8	0	8	20	0
Mvmt Flow	14	17	4	658	190	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	858	192	194	0	-	0
Stage 1	192	-	-	-	-	-
Stage 2	666	-	-	-	-	-
Critical Hdwy	6.4	6.28	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.372	2.2	-	-	-
Pot Cap-1 Maneuver	330	834	1391	-	-	-
Stage 1	845	-	-	-	-	-
Stage 2	515	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	328	834	1391	-	-	-
Mov Cap-2 Maneuver	328	-	-	-	-	-
Stage 1	841	-	-	-	-	-
Stage 2	515	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.8	0	0
HCM LOS	B		

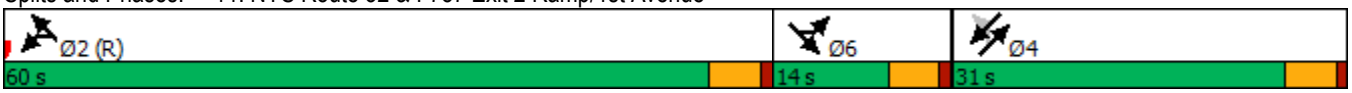
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1391	-	491	-	-
HCM Lane V/C Ratio	0.003	-	0.064	-	-
HCM Control Delay (s)	7.6	0	12.8	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	2	0	47	877	101	60	6	61	0	0	202	9
Future Volume (vph)	2	0	47	877	101	60	6	61	0	0	202	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.87										
Frt		0.871			0.944						0.994	
Flt Protected		0.998		0.950				0.996				
Satd. Flow (prot)	0	1358	0	1719	1754	0	0	1692	0	0	1715	0
Flt Permitted		0.998		0.950				0.967				
Satd. Flow (perm)	0	1353	0	1719	1754	0	0	1642	0	0	1715	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		73			43						2	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		181			194			438			445	
Travel Time (s)		4.9			5.3			11.9			12.1	
Confl. Peds. (#/hr)	19		19									
Peak Hour Factor	0.73	0.73	0.73	0.90	0.90	0.90	0.83	0.83	0.83	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	7%	5%	0%	6%	0%	13%	0%	0%	10%	13%
Adj. Flow (vph)	3	0	64	974	112	67	7	73	0	0	220	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	67	0	974	179	0	0	80	0	0	230	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Split	NA		Split	NA		Perm	NA			NA	
Protected Phases	6	6		2	2			4			4	
Permitted Phases							4					
Detector Phase	6	6		2	2		4	4			4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0			5.0	
Minimum Split (s)	23.0	23.0		24.0	24.0		24.0	24.0			24.0	
Total Split (s)	14.0	14.0		60.0	60.0		31.0	31.0			31.0	
Total Split (%)	13.3%	13.3%		57.1%	57.1%		29.5%	29.5%			29.5%	
Maximum Green (s)	9.0	9.0		55.0	55.0		26.0	26.0			26.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0			1.0	
Lost Time Adjust (s)		0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)		5.0		5.0	5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Recall Mode	None	None		C-Max	C-Max		None	None			None	
Act Effct Green (s)		6.5		66.4	66.4			19.2			19.2	

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Actuated g/C Ratio		0.06		0.63	0.63			0.18			0.18	
v/c Ratio		0.44		0.90	0.16			0.27			0.73	
Control Delay		19.1		31.8	8.0			37.4			53.3	
Queue Delay		0.0		0.0	0.0			0.0			0.0	
Total Delay		19.1		31.8	8.0			37.4			53.3	
LOS		B		C	A			D			D	
Approach Delay		19.1			28.1			37.4			53.3	
Approach LOS		B			C			D			D	
Queue Length 50th (ft)		0		527	35			47			146	
Queue Length 95th (ft)		22		#979	83			76			212	
Internal Link Dist (ft)		101			114			358			365	
Turn Bay Length (ft)												
Base Capacity (vph)		183		1087	1125			406			426	
Starvation Cap Reductn		0		0	0			0			0	
Spillback Cap Reductn		0		0	0			0			0	
Storage Cap Reductn		0		0	0			0			0	
Reduced v/c Ratio		0.37		0.90	0.16			0.20			0.54	

Intersection Summary			
Area Type:	Other		
Cycle Length: 105			
Actuated Cycle Length: 105			
Offset: 0 (0%), Referenced to phase 2:NWTL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.90			
Intersection Signal Delay: 32.0		Intersection LOS: C	
Intersection Capacity Utilization 74.8%		ICU Level of Service D	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 11: NYS Route 32 & I-787 Exit 2 Ramp/1st Avenue

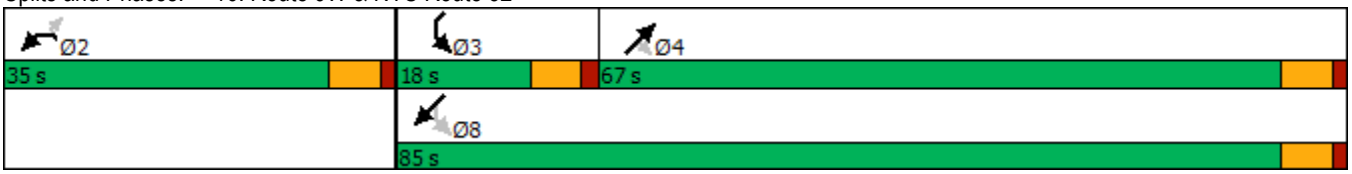


Lane Group	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Volume (vph)	291	100	1081	92	88	1439
Future Volume (vph)	291	100	1081	92	88	1439
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	75		200	100	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1719	1455	3471	1509	1583	3539
Flt Permitted	0.950				0.096	
Satd. Flow (perm)	1719	1455	3471	1509	160	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		54		89		
Link Speed (mph)	45		45			45
Link Distance (ft)	1257		583			1004
Travel Time (s)	19.0		8.8			15.2
Peak Hour Factor	0.91	0.91	0.91	0.91	0.94	0.94
Heavy Vehicles (%)	5%	11%	4%	7%	14%	2%
Adj. Flow (vph)	320	110	1188	101	94	1531
Shared Lane Traffic (%)						
Lane Group Flow (vph)	320	110	1188	101	94	1531
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Turn Type	Prot	Perm	NA	Perm	pm+pt	NA
Protected Phases	2		4		3	8
Permitted Phases		2		4	8	8
Detector Phase	2	2	4	4	3	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	17.0	17.0	24.0	24.0	11.0	11.0
Total Split (s)	35.0	35.0	67.0	67.0	18.0	85.0
Total Split (%)	29.2%	29.2%	55.8%	55.8%	15.0%	70.8%
Maximum Green (s)	29.0	29.0	61.0	61.0	12.0	79.0
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	Max	None	None	None	None

Lane Group	NWL	NWR	NET	NER	SWL	SWT
Act Effct Green (s)	29.5	29.5	42.4	42.4	53.5	53.5
Actuated g/C Ratio	0.31	0.31	0.44	0.44	0.56	0.56
v/c Ratio	0.60	0.23	0.77	0.14	0.45	0.77
Control Delay	36.7	17.8	26.5	4.8	16.1	18.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.7	17.8	26.5	4.8	16.1	18.6
LOS	D	B	C	A	B	B
Approach Delay	31.9		24.8			18.4
Approach LOS	C		C			B
Queue Length 50th (ft)	165	24	323	4	24	345
Queue Length 95th (ft)	319	80	416	32	48	421
Internal Link Dist (ft)	1177		503			924
Turn Bay Length (ft)		75		200	100	
Base Capacity (vph)	532	488	2263	1014	272	2955
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.23	0.52	0.10	0.35	0.52

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 95.3			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 22.6		Intersection LOS: C	
Intersection Capacity Utilization 65.9%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 16: Route 9W & NYS Route 32





Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	71	12	253	13	6	930
Future Volume (vph)	71	12	253	13	6	930
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.981		0.993			
Flt Protected	0.959					
Satd. Flow (prot)	1653	0	1714	0	0	1806
Flt Permitted	0.959					0.998
Satd. Flow (perm)	1653	0	1714	0	0	1802
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	12		6			
Link Speed (mph)	30		30			30
Link Distance (ft)	421		375			362
Travel Time (s)	9.6		8.5			8.2
Peak Hour Factor	0.85	0.85	0.72	0.72	0.94	0.94
Heavy Vehicles (%)	8%	9%	8%	50%	40%	5%
Adj. Flow (vph)	84	14	351	18	6	989
Shared Lane Traffic (%)						
Lane Group Flow (vph)	98	0	369	0	0	995
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Turn Type	Perm		NA		Perm	NA
Protected Phases			2			2
Permitted Phases	8				2	
Detector Phase	8		2		2	2
Switch Phase						
Minimum Initial (s)	5.0		5.0		5.0	5.0
Minimum Split (s)	23.0		23.0		23.0	23.0
Total Split (s)	25.0		45.0		45.0	45.0
Total Split (%)	35.7%		64.3%		64.3%	64.3%
Maximum Green (s)	20.0		40.0		40.0	40.0
Yellow Time (s)	3.5		3.5		3.5	3.5
All-Red Time (s)	1.5		1.5		1.5	1.5
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	5.0		5.0			5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		Max		Max	Max
Walk Time (s)	7.0		7.0		7.0	7.0
Flash Dont Walk (s)	11.0		11.0		11.0	11.0
Pedestrian Calls (#/hr)	0		0		0	0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Act Effct Green (s)	8.9		51.1			51.1
Actuated g/C Ratio	0.13		0.77			0.77
v/c Ratio	0.43		0.28			0.72
Control Delay	28.8		4.2			11.1
Queue Delay	0.0		0.0			0.0
Total Delay	28.8		4.2			11.1
LOS	C		A			B
Approach Delay	28.8		4.2			11.1
Approach LOS	C		A			B
Queue Length 50th (ft)	36		42			203
Queue Length 95th (ft)	61		64			#541
Internal Link Dist (ft)	341		295			282
Turn Bay Length (ft)						
Base Capacity (vph)	507		1316			1383
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.19		0.28			0.72

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 66.6			
Natural Cycle: 70			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.72			
Intersection Signal Delay: 10.6		Intersection LOS: B	
Intersection Capacity Utilization 66.7%		ICU Level of Service C	
Analysis Period (min) 15			

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 20: NYS Route 32 & South Port Road



Intersection	
Int Delay, s/veh	6.3

Movement	EBL	EBR	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	66	283	204	128	221	83
Future Vol, veh/h	66	283	204	128	221	83
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	Yield
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	74	74	85	85
Heavy Vehicles, %	12	3	9	8	4	8
Mvmt Flow	80	345	276	173	260	98

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1034	309	260	0	-	0
Stage 1	309	-	-	-	-	-
Stage 2	725	-	-	-	-	-
Critical Hdwy	6.52	6.23	4.19	-	-	-
Critical Hdwy Stg 1	5.52	-	-	-	-	-
Critical Hdwy Stg 2	5.52	-	-	-	-	-
Follow-up Hdwy	3.608	3.327	2.281	-	-	-
Pot Cap-1 Maneuver	246	729	1265	-	-	-
Stage 1	722	-	-	-	-	-
Stage 2	462	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	187	729	1265	-	-	-
Mov Cap-2 Maneuver	187	-	-	-	-	-
Stage 1	548	-	-	-	-	-
Stage 2	462	-	-	-	-	-

Approach	EB	NE	SW
HCM Control Delay, s	12.6	5.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NEL	NET	EBLn1	SWT	SWR
Capacity (veh/h)	1265	-	899	-	-
HCM Lane V/C Ratio	0.218	-	0.473	-	-
HCM Control Delay (s)	8.6	0	12.6	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.8	-	2.6	-	-

Intersection	
Int Delay, s/veh	2.3

Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	22	202	405	285	59	33
Future Vol, veh/h	22	202	405	285	59	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	77	77	84	84	81	81
Heavy Vehicles, %	4	0	0	5	5	1
Mvmt Flow	29	262	482	339	73	41

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	821	0	-	0	972	652
Stage 1	-	-	-	-	652	-
Stage 2	-	-	-	-	320	-
Critical Hdwy	4.14	-	-	-	6.45	6.21
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	2.236	-	-	-	3.545	3.309
Pot Cap-1 Maneuver	800	-	-	-	277	470
Stage 1	-	-	-	-	513	-
Stage 2	-	-	-	-	729	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	800	-	-	-	265	470
Mov Cap-2 Maneuver	-	-	-	-	265	-
Stage 1	-	-	-	-	491	-
Stage 2	-	-	-	-	729	-

Approach	NB	SB	NE
HCM Control Delay, s	0.9	0	22.8
HCM LOS			C

Minor Lane/Major Mvmt	NELn1	NBL	NBT	SBT	SBR
Capacity (veh/h)	314	800	-	-	-
HCM Lane V/C Ratio	0.362	0.036	-	-	-
HCM Control Delay (s)	22.8	9.7	0	-	-
HCM Lane LOS	C	A	A	-	-
HCM 95th %tile Q(veh)	1.6	0.1	-	-	-

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	30	68	44	235	673	329
Future Vol, veh/h	30	68	44	235	673	329
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	125	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	88	88	91	91
Heavy Vehicles, %	29	14	10	7	7	2
Mvmt Flow	33	74	50	267	740	362

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1288	921	1102	0	-	0
Stage 1	921	-	-	-	-	-
Stage 2	367	-	-	-	-	-
Critical Hdwy	6.69	6.34	4.2	-	-	-
Critical Hdwy Stg 1	5.69	-	-	-	-	-
Critical Hdwy Stg 2	5.69	-	-	-	-	-
Follow-up Hdwy	3.761	3.426	2.29	-	-	-
Pot Cap-1 Maneuver	159	312	605	-	-	-
Stage 1	348	-	-	-	-	-
Stage 2	645	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	144	312	605	-	-	-
Mov Cap-2 Maneuver	144	-	-	-	-	-
Stage 1	314	-	-	-	-	-
Stage 2	645	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	25.3	1.8	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	605	-	144	312	-	-
HCM Lane V/C Ratio	0.083	-	0.226	0.237	-	-
HCM Control Delay (s)	11.5	0	37.2	20.1	-	-
HCM Lane LOS	B	A	E	C	-	-
HCM 95th %tile Q(veh)	0.3	-	0.8	0.9	-	-

Intersection	
Int Delay, s/veh	3.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	60	32	87	96	16	61
Future Vol, veh/h	60	32	87	96	16	61
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	0	50	-	-	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	83	83	84	84	78	78
Heavy Vehicles, %	26	10	25	13	0	37
Mvmt Flow	72	39	104	114	21	78

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	281	161	0	0	218	0
Stage 1	161	-	-	-	-	-
Stage 2	120	-	-	-	-	-
Critical Hdwy	6.66	6.3	-	-	4.1	-
Critical Hdwy Stg 1	5.66	-	-	-	-	-
Critical Hdwy Stg 2	5.66	-	-	-	-	-
Follow-up Hdwy	3.734	3.39	-	-	2.2	-
Pot Cap-1 Maneuver	661	863	-	-	1364	-
Stage 1	813	-	-	-	-	-
Stage 2	849	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	651	863	-	-	1364	-
Mov Cap-2 Maneuver	651	-	-	-	-	-
Stage 1	813	-	-	-	-	-
Stage 2	836	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.6	0	1.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	651	863	1364	-
HCM Lane V/C Ratio	-	-	0.111	0.045	0.015	-
HCM Control Delay (s)	-	-	11.2	9.4	7.7	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.4	0.1	0	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	2	5	192	408	6
Future Vol, veh/h	4	2	5	192	408	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	50	50	30	80	88	63
Heavy Vehicles, %	0	0	0	7	4	0
Mvmt Flow	8	4	17	240	464	10

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	743	469	474	0	-	0
Stage 1	469	-	-	-	-	-
Stage 2	274	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	386	598	1099	-	-	-
Stage 1	634	-	-	-	-	-
Stage 2	777	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	379	598	1099	-	-	-
Mov Cap-2 Maneuver	379	-	-	-	-	-
Stage 1	623	-	-	-	-	-
Stage 2	777	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.6	0.5	0
HCM LOS	B		

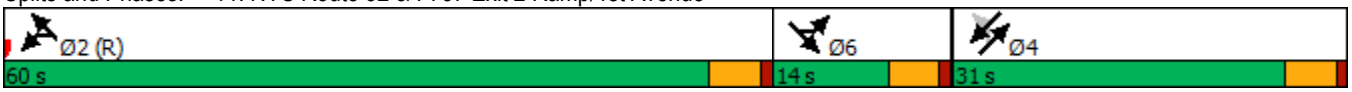
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1099	-	432	-	-
HCM Lane V/C Ratio	0.015	-	0.028	-	-
HCM Control Delay (s)	8.3	0	13.6	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	3	0	30	423	53	90	8	65	0	0	105	4
Future Volume (vph)	3	0	30	423	53	90	8	65	0	0	105	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.88										
Frt		0.878			0.906						0.995	
Flt Protected		0.995		0.950				0.994				
Satd. Flow (prot)	0	1380	0	1444	1426	0	0	1644	0	0	1599	0
Flt Permitted		0.995		0.950				0.959				
Satd. Flow (perm)	0	1368	0	1444	1426	0	0	1586	0	0	1599	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		73			101						2	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		181			194			438			445	
Travel Time (s)		4.9			5.3			11.9			12.1	
Confl. Peds. (#/hr)	19		19									
Peak Hour Factor	0.82	0.82	0.82	0.89	0.89	0.89	0.91	0.91	0.91	0.78	0.78	0.78
Heavy Vehicles (%)	0%	0%	7%	25%	0%	33%	14%	15%	0%	0%	18%	25%
Adj. Flow (vph)	4	0	37	475	60	101	9	71	0	0	135	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	41	0	475	161	0	0	80	0	0	140	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Split	NA		Split	NA		Perm	NA			NA	
Protected Phases	6	6		2	2			4			4	
Permitted Phases							4					
Detector Phase	6	6		2	2		4	4			4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0			5.0	
Minimum Split (s)	14.0	14.0		24.0	24.0		24.0	24.0			24.0	
Total Split (s)	14.0	14.0		60.0	60.0		31.0	31.0			31.0	
Total Split (%)	13.3%	13.3%		57.1%	57.1%		29.5%	29.5%			29.5%	
Maximum Green (s)	9.0	9.0		55.0	55.0		26.0	26.0			26.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0			1.0	
Lost Time Adjust (s)		0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)		5.0		5.0	5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Recall Mode	None	None		C-Max	C-Max		None	None			None	
Act Effct Green (s)		5.7		74.1	74.1			14.4			14.4	

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Actuated g/C Ratio		0.05		0.71	0.71			0.14			0.14	
v/c Ratio		0.28		0.47	0.16			0.37			0.64	
Control Delay		8.4		10.5	3.5			44.7			54.6	
Queue Delay		0.0		0.0	0.0			0.0			0.0	
Total Delay		8.4		10.5	3.5			44.7			54.6	
LOS		A		B	A			D			D	
Approach Delay		8.4			8.7			44.7			54.6	
Approach LOS		A			A			D			D	
Queue Length 50th (ft)		0		142	13			50			89	
Queue Length 95th (ft)		7		262	42			90			123	
Internal Link Dist (ft)		101			114			358			365	
Turn Bay Length (ft)												
Base Capacity (vph)		185		1019	1036			392			397	
Starvation Cap Reductn		0		0	0			0			0	
Spillback Cap Reductn		0		0	0			0			0	
Storage Cap Reductn		0		0	0			0			0	
Reduced v/c Ratio		0.22		0.47	0.16			0.20			0.35	

Intersection Summary			
Area Type:	Other		
Cycle Length: 105			
Actuated Cycle Length: 105			
Offset: 0 (0%), Referenced to phase 2:NWTL, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay: 19.1		Intersection LOS: B	
Intersection Capacity Utilization 48.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 11: NYS Route 32 & I-787 Exit 2 Ramp/1st Avenue



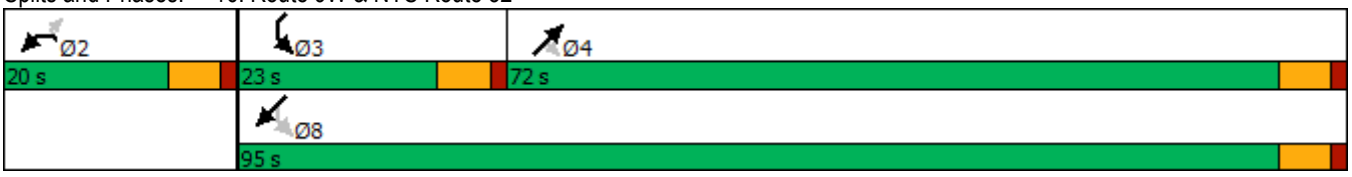
Lane Group	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Volume (vph)	95	153	2035	168	114	821
Future Volume (vph)	95	153	2035	168	114	821
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	75		200	100	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1530	1442	3505	1482	1388	3406
Flt Permitted	0.950				0.055	
Satd. Flow (perm)	1530	1442	3505	1482	80	3406
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		176		104		
Link Speed (mph)	45		45			45
Link Distance (ft)	1257		583			1004
Travel Time (s)	19.0		8.8			15.2
Peak Hour Factor	0.87	0.87	0.93	0.93	0.85	0.85
Heavy Vehicles (%)	18%	12%	3%	9%	30%	6%
Adj. Flow (vph)	109	176	2188	181	134	966
Shared Lane Traffic (%)						
Lane Group Flow (vph)	109	176	2188	181	134	966
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Turn Type	Prot	Perm	NA	Perm	pm+pt	NA
Protected Phases	2		4		3	8
Permitted Phases		2		4	8	8
Detector Phase	2	2	4	4	3	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	17.0	17.0	24.0	24.0	11.0	11.0
Total Split (s)	20.0	20.0	72.0	72.0	23.0	95.0
Total Split (%)	17.4%	17.4%	62.6%	62.6%	20.0%	82.6%
Maximum Green (s)	14.0	14.0	66.0	66.0	17.0	89.0
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	Max	None	None	None	None

Lane Group	NWL	NWR	NET	NER	SWL	SWT
Act Effct Green (s)	14.0	14.0	66.1	66.1	83.5	83.5
Actuated g/C Ratio	0.13	0.13	0.60	0.60	0.76	0.76
v/c Ratio	0.56	0.52	1.03	0.19	0.68	0.37
Control Delay	57.7	12.8	52.1	5.2	40.6	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.7	12.8	52.1	5.2	40.6	4.7
LOS	E	B	D	A	D	A
Approach Delay	30.0		48.5			9.1
Approach LOS	C		D			A
Queue Length 50th (ft)	73	0	~870	21	51	98
Queue Length 95th (ft)	133	58	#1096	58	107	113
Internal Link Dist (ft)	1177		503			924
Turn Bay Length (ft)		75		200	100	
Base Capacity (vph)	195	338	2115	935	264	2771
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.52	1.03	0.19	0.51	0.35

Intersection Summary

Area Type: Other
Cycle Length: 115
Actuated Cycle Length: 109.5
Natural Cycle: 90
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.03
Intersection Signal Delay: 35.6 Intersection LOS: D
Intersection Capacity Utilization 82.8% ICU Level of Service E
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 16: Route 9W & NYS Route 32





Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	24	50	717	51	71	258
Future Volume (vph)	24	50	717	51	71	258
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.909		0.991			
Flt Protected	0.984					0.990
Satd. Flow (prot)	1032	0	1763	0	0	1501
Flt Permitted	0.984					0.752
Satd. Flow (perm)	1032	0	1763	0	0	1140
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	67		9			
Link Speed (mph)	30		30			30
Link Distance (ft)	421		375			362
Travel Time (s)	9.6		8.5			8.2
Peak Hour Factor	0.75	0.75	0.87	0.87	0.90	0.84
Heavy Vehicles (%)	60%	67%	6%	18%	42%	21%
Adj. Flow (vph)	32	67	824	59	79	307
Shared Lane Traffic (%)						
Lane Group Flow (vph)	99	0	883	0	0	386
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Turn Type	Perm		NA		Perm	NA
Protected Phases			2			2
Permitted Phases	8				2	
Detector Phase	8		2		2	2
Switch Phase						
Minimum Initial (s)	5.0		5.0		5.0	5.0
Minimum Split (s)	23.0		23.0		23.0	23.0
Total Split (s)	25.0		45.0		45.0	45.0
Total Split (%)	35.7%		64.3%		64.3%	64.3%
Maximum Green (s)	20.0		40.0		40.0	40.0
Yellow Time (s)	3.5		3.5		3.5	3.5
All-Red Time (s)	1.5		1.5		1.5	1.5
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	5.0		5.0			5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		Max		Max	Max
Walk Time (s)	7.0		7.0		7.0	7.0
Flash Dont Walk (s)	11.0		11.0		11.0	11.0
Pedestrian Calls (#/hr)	0		0		0	0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Act Effct Green (s)	8.4		51.0			51.0
Actuated g/C Ratio	0.13		0.77			0.77
v/c Ratio	0.52		0.65			0.44
Control Delay	21.5		8.9			6.4
Queue Delay	0.0		0.0			0.0
Total Delay	21.5		8.9			6.4
LOS	C		A			A
Approach Delay	21.5		8.9			6.4
Approach LOS	C		A			A
Queue Length 50th (ft)	13		142			48
Queue Length 95th (ft)	34		337			118
Internal Link Dist (ft)	341		295			282
Turn Bay Length (ft)						
Base Capacity (vph)	360		1363			880
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.28		0.65			0.44

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 66			
Natural Cycle: 65			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.65			
Intersection Signal Delay: 9.1		Intersection LOS: A	
Intersection Capacity Utilization 75.2%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 20: NYS Route 32 & South Port Road



Intersection	
Int Delay, s/veh	6.6

Movement	EBL	EBR	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	60	229	325	340	78	129
Future Vol, veh/h	60	229	325	340	78	129
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	Yield
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	91	91	88	88
Heavy Vehicles, %	9	20	10	10	18	17
Mvmt Flow	67	254	357	374	89	147

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1251	163	89	0	-	0
Stage 1	163	-	-	-	-	-
Stage 2	1088	-	-	-	-	-
Critical Hdwy	6.49	6.4	4.2	-	-	-
Critical Hdwy Stg 1	5.49	-	-	-	-	-
Critical Hdwy Stg 2	5.49	-	-	-	-	-
Follow-up Hdwy	3.581	3.48	2.29	-	-	-
Pot Cap-1 Maneuver	184	837	1457	-	-	-
Stage 1	849	-	-	-	-	-
Stage 2	313	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	127	837	1457	-	-	-
Mov Cap-2 Maneuver	127	-	-	-	-	-
Stage 1	587	-	-	-	-	-
Stage 2	313	-	-	-	-	-

Approach	EB	NE	SW
HCM Control Delay, s	17.2	4	0
HCM LOS	C		

Minor Lane/Major Mvmt	NEL	NET	EBLn1	SWT	SWR
Capacity (veh/h)	1457	-	612	-	-
HCM Lane V/C Ratio	0.245	-	0.525	-	-
HCM Control Delay (s)	8.3	0	17.2	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	1	-	3.1	-	-

Intersection	
Int Delay, s/veh	11.3

Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	21	543	197	62	170	20
Future Vol, veh/h	21	543	197	62	170	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	81	81	83	83
Heavy Vehicles, %	3	0	22	10	12	11
Mvmt Flow	25	646	243	77	205	24

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	320	0	-	0	978	282
Stage 1	-	-	-	-	282	-
Stage 2	-	-	-	-	696	-
Critical Hdwy	4.13	-	-	-	6.52	6.31
Critical Hdwy Stg 1	-	-	-	-	5.52	-
Critical Hdwy Stg 2	-	-	-	-	5.52	-
Follow-up Hdwy	2.227	-	-	-	3.608	3.399
Pot Cap-1 Maneuver	1234	-	-	-	266	736
Stage 1	-	-	-	-	743	-
Stage 2	-	-	-	-	477	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1234	-	-	-	257	736
Mov Cap-2 Maneuver	-	-	-	-	257	-
Stage 1	-	-	-	-	719	-
Stage 2	-	-	-	-	477	-

Approach	NB	SB	NE
HCM Control Delay, s	0.3	0	59.3
HCM LOS			F

Minor Lane/Major Mvmt	NELn1	NBL	NBT	SBT	SBR
Capacity (veh/h)	276	1234	-	-	-
HCM Lane V/C Ratio	0.829	0.02	-	-	-
HCM Control Delay (s)	59.3	8	0	-	-
HCM Lane LOS	F	A	A	-	-
HCM 95th %tile Q(veh)	6.8	0.1	-	-	-

Intersection	
Int Delay, s/veh	7.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	115	51	57	654	224	59
Future Vol, veh/h	115	51	57	654	224	59
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	125	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	86	86	90	90
Heavy Vehicles, %	13	28	20	9	23	28
Mvmt Flow	132	59	66	760	249	66

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1174	282	315	0	-	0
Stage 1	282	-	-	-	-	-
Stage 2	892	-	-	-	-	-
Critical Hdwy	6.53	6.48	4.3	-	-	-
Critical Hdwy Stg 1	5.53	-	-	-	-	-
Critical Hdwy Stg 2	5.53	-	-	-	-	-
Follow-up Hdwy	3.617	3.552	2.38	-	-	-
Pot Cap-1 Maneuver	202	699	1150	-	-	-
Stage 1	741	-	-	-	-	-
Stage 2	383	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	182	699	1150	-	-	-
Mov Cap-2 Maneuver	182	-	-	-	-	-
Stage 1	668	-	-	-	-	-
Stage 2	383	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	47.9	0.7	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1150	-	182	699	-	-
HCM Lane V/C Ratio	0.058	-	0.726	0.084	-	-
HCM Control Delay (s)	8.3	0	64.5	10.6	-	-
HCM Lane LOS	A	A	F	B	-	-
HCM 95th %tile Q(veh)	0.2	-	4.6	0.3	-	-

Intersection	
Int Delay, s/veh	6.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	123	7	45	47	43	56
Future Vol, veh/h	123	7	45	47	43	56
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	0	50	-	-	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	65	65	84	84	62	62
Heavy Vehicles, %	25	17	42	42	0	25
Mvmt Flow	189	11	54	56	69	90

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	310	82	0	0	110	0
Stage 1	82	-	-	-	-	-
Stage 2	228	-	-	-	-	-
Critical Hdwy	6.65	6.37	-	-	4.1	-
Critical Hdwy Stg 1	5.65	-	-	-	-	-
Critical Hdwy Stg 2	5.65	-	-	-	-	-
Follow-up Hdwy	3.725	3.453	-	-	2.2	-
Pot Cap-1 Maneuver	637	938	-	-	1493	-
Stage 1	886	-	-	-	-	-
Stage 2	759	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	608	938	-	-	1493	-
Mov Cap-2 Maneuver	608	-	-	-	-	-
Stage 1	886	-	-	-	-	-
Stage 2	724	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.3	0	3.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	608	938	1493	-
HCM Lane V/C Ratio	-	-	0.311	0.011	0.046	-
HCM Control Delay (s)	-	-	13.6	8.9	7.5	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	1.3	0	0.1	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	14	3	481	182	2
Future Vol, veh/h	7	14	3	481	182	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	42	81	75	72	93	25
Heavy Vehicles, %	0	8	0	8	20	0
Mvmt Flow	17	17	4	668	196	8

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	876	200	204	0	-	0
Stage 1	200	-	-	-	-	-
Stage 2	676	-	-	-	-	-
Critical Hdwy	6.4	6.28	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.372	2.2	-	-	-
Pot Cap-1 Maneuver	322	826	1380	-	-	-
Stage 1	838	-	-	-	-	-
Stage 2	509	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	320	826	1380	-	-	-
Mov Cap-2 Maneuver	320	-	-	-	-	-
Stage 1	834	-	-	-	-	-
Stage 2	509	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.4	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1380	-	465	-	-
HCM Lane V/C Ratio	0.003	-	0.073	-	-
HCM Control Delay (s)	7.6	0	13.4	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	4	479	9	6	210
Future Vol, veh/h	6	4	479	9	6	210
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	92	92	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	5	521	10	7	247

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	787	526	0	0	531	0
Stage 1	526	-	-	-	-	-
Stage 2	261	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	360	552	-	-	1036	-
Stage 1	593	-	-	-	-	-
Stage 2	783	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	357	552	-	-	1036	-
Mov Cap-2 Maneuver	357	-	-	-	-	-
Stage 1	593	-	-	-	-	-
Stage 2	777	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.9	0	0.2
HCM LOS	B		

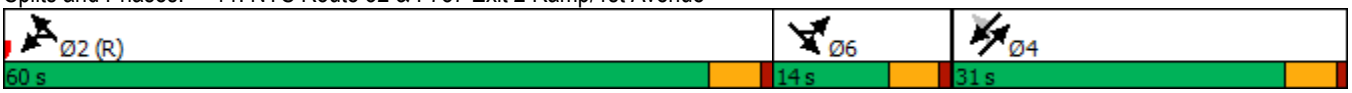
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	416	1036	-
HCM Lane V/C Ratio	-	-	0.03	0.007	-
HCM Control Delay (s)	-	-	13.9	8.5	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	2	0	47	894	101	60	6	69	0	0	206	9
Future Volume (vph)	2	0	47	894	101	60	6	69	0	0	206	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.87										
Frt		0.871			0.944						0.994	
Flt Protected		0.998		0.950				0.996				
Satd. Flow (prot)	0	1358	0	1719	1754	0	0	1690	0	0	1715	0
Flt Permitted		0.998		0.950				0.970				
Satd. Flow (perm)	0	1353	0	1719	1754	0	0	1646	0	0	1715	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		73			43						2	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		181			194			438			445	
Travel Time (s)		4.9			5.3			11.9			12.1	
Confl. Peds. (#/hr)	19		19									
Peak Hour Factor	0.73	0.73	0.73	0.90	0.90	0.90	0.83	0.83	0.83	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	7%	5%	0%	6%	0%	13%	0%	0%	10%	13%
Adj. Flow (vph)	3	0	64	993	112	67	7	83	0	0	224	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	67	0	993	179	0	0	90	0	0	234	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Split	NA		Split	NA		Perm	NA			NA	
Protected Phases	6	6		2	2			4			4	
Permitted Phases							4					
Detector Phase	6	6		2	2		4	4			4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0			5.0	
Minimum Split (s)	14.0	14.0		24.0	24.0		24.0	24.0			24.0	
Total Split (s)	14.0	14.0		60.0	60.0		31.0	31.0			31.0	
Total Split (%)	13.3%	13.3%		57.1%	57.1%		29.5%	29.5%			29.5%	
Maximum Green (s)	9.0	9.0		55.0	55.0		26.0	26.0			26.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0			1.0	
Lost Time Adjust (s)		0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)		5.0		5.0	5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Recall Mode	None	None		C-Max	C-Max		None	None			None	
Act Effct Green (s)		6.5		66.3	66.3			19.3			19.3	

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Actuated g/C Ratio		0.06		0.63	0.63			0.18			0.18	
v/c Ratio		0.44		0.92	0.16			0.30			0.74	
Control Delay		19.1		34.2	8.1			37.9			53.6	
Queue Delay		0.0		0.0	0.0			0.0			0.0	
Total Delay		19.1		34.2	8.1			37.9			53.6	
LOS		B		C	A			D			D	
Approach Delay		19.1			30.2			37.9			53.6	
Approach LOS		B			C			D			D	
Queue Length 50th (ft)		0		554	35			53			149	
Queue Length 95th (ft)		22		#1006	83			84			216	
Internal Link Dist (ft)		101			114			358			365	
Turn Bay Length (ft)												
Base Capacity (vph)		183		1084	1122			407			426	
Starvation Cap Reductn		0		0	0			0			0	
Spillback Cap Reductn		0		0	0			0			0	
Storage Cap Reductn		0		0	0			0			0	
Reduced v/c Ratio		0.37		0.92	0.16			0.22			0.55	

Intersection Summary			
Area Type:	Other		
Cycle Length: 105			
Actuated Cycle Length: 105			
Offset: 0 (0%), Referenced to phase 2:NWTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.92			
Intersection Signal Delay: 33.7		Intersection LOS: C	
Intersection Capacity Utilization 75.9%		ICU Level of Service D	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 11: NYS Route 32 & I-787 Exit 2 Ramp/1st Avenue



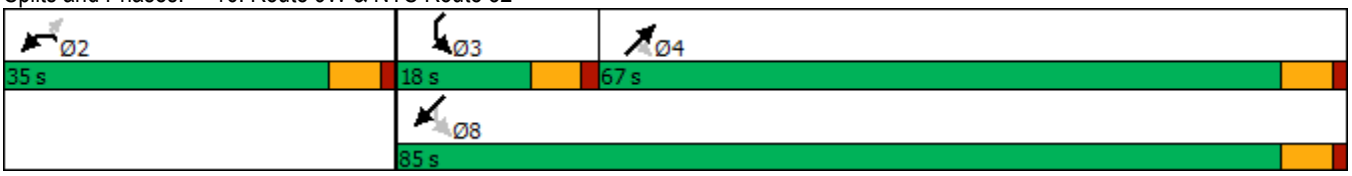
Lane Group	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Volume (vph)	295	115	1081	94	95	1439
Future Volume (vph)	295	115	1081	94	95	1439
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	75		200	100	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1719	1455	3471	1509	1583	3539
Flt Permitted	0.950				0.096	
Satd. Flow (perm)	1719	1455	3471	1509	160	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		62		91		
Link Speed (mph)	45		45			45
Link Distance (ft)	1257		583			1004
Travel Time (s)	19.0		8.8			15.2
Peak Hour Factor	0.91	0.91	0.91	0.91	0.94	0.94
Heavy Vehicles (%)	5%	11%	4%	7%	14%	2%
Adj. Flow (vph)	324	126	1188	103	101	1531
Shared Lane Traffic (%)						
Lane Group Flow (vph)	324	126	1188	103	101	1531
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Turn Type	Prot	Perm	NA	Perm	pm+pt	NA
Protected Phases	2		4		3	8
Permitted Phases		2		4	8	8
Detector Phase	2	2	4	4	3	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	17.0	17.0	24.0	24.0	11.0	11.0
Total Split (s)	35.0	35.0	67.0	67.0	18.0	85.0
Total Split (%)	29.2%	29.2%	55.8%	55.8%	15.0%	70.8%
Maximum Green (s)	29.0	29.0	61.0	61.0	12.0	79.0
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	Max	None	None	None	None

Lane Group	NWL	NWR	NET	NER	SWL	SWT
Act Effct Green (s)	29.6	29.6	42.6	42.6	53.8	53.8
Actuated g/C Ratio	0.31	0.31	0.45	0.45	0.56	0.56
v/c Ratio	0.61	0.26	0.77	0.14	0.48	0.77
Control Delay	37.2	17.8	26.6	4.8	17.6	18.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.2	17.8	26.6	4.8	17.6	18.5
LOS	D	B	C	A	B	B
Approach Delay	31.7		24.9			18.4
Approach LOS	C		C			B
Queue Length 50th (ft)	168	28	325	4	26	345
Queue Length 95th (ft)	#330	90	418	33	55	420
Internal Link Dist (ft)	1177		503			924
Turn Bay Length (ft)		75		200	100	
Base Capacity (vph)	531	492	2258	1013	271	2947
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.26	0.53	0.10	0.37	0.52

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 95.6			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 22.7		Intersection LOS: C	
Intersection Capacity Utilization 66.5%		ICU Level of Service C	
Analysis Period (min) 15			

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 16: Route 9W & NYS Route 32





Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	86	54	253	21	26	930
Future Volume (vph)	86	54	253	21	26	930
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.948		0.990			
Flt Protected	0.970					0.999
Satd. Flow (prot)	1612	0	1691	0	0	1791
Flt Permitted	0.970					0.985
Satd. Flow (perm)	1612	0	1691	0	0	1766
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	46		10			
Link Speed (mph)	30		30			30
Link Distance (ft)	421		375			362
Travel Time (s)	9.6		8.5			8.2
Peak Hour Factor	0.85	0.85	0.72	0.72	0.94	0.94
Heavy Vehicles (%)	8%	9%	8%	50%	40%	5%
Adj. Flow (vph)	101	64	351	29	28	989
Shared Lane Traffic (%)						
Lane Group Flow (vph)	165	0	380	0	0	1017
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Turn Type	Perm		NA		Perm	NA
Protected Phases			2			2
Permitted Phases	8				2	
Detector Phase	8		2		2	2
Switch Phase						
Minimum Initial (s)	5.0		5.0		5.0	5.0
Minimum Split (s)	23.0		23.0		23.0	23.0
Total Split (s)	25.0		45.0		45.0	45.0
Total Split (%)	35.7%		64.3%		64.3%	64.3%
Maximum Green (s)	20.0		40.0		40.0	40.0
Yellow Time (s)	3.5		3.5		3.5	3.5
All-Red Time (s)	1.5		1.5		1.5	1.5
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	5.0		5.0			5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		Max		Max	Max
Walk Time (s)	7.0		7.0		7.0	7.0
Flash Dont Walk (s)	11.0		11.0		11.0	11.0
Pedestrian Calls (#/hr)	0		0		0	0



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Act Effct Green (s)	10.2		45.1			45.1
Actuated g/C Ratio	0.16		0.69			0.69
v/c Ratio	0.57		0.32			0.83
Control Delay	24.9		5.5			17.4
Queue Delay	0.0		0.0			0.0
Total Delay	24.9		5.5			17.4
LOS	C		A			B
Approach Delay	24.9		5.5			17.4
Approach LOS	C		A			B
Queue Length 50th (ft)	42		46			234
Queue Length 95th (ft)	82		77			#610
Internal Link Dist (ft)	341		295			282
Turn Bay Length (ft)						
Base Capacity (vph)	526		1170			1218
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.31		0.32			0.83

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 65.3			
Natural Cycle: 75			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay: 15.3		Intersection LOS: B	
Intersection Capacity Utilization 85.5%		ICU Level of Service E	
Analysis Period (min) 15			

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 20: NYS Route 32 & South Port Road



Intersection	
Int Delay, s/veh	6.3

Movement	EBL	EBR	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	67	283	204	132	229	85
Future Vol, veh/h	67	283	204	132	229	85
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	Yield
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	74	74	85	85
Heavy Vehicles, %	12	3	9	8	4	8
Mvmt Flow	82	345	276	178	269	100

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1049	319	269	0	-	0
Stage 1	319	-	-	-	-	-
Stage 2	730	-	-	-	-	-
Critical Hdwy	6.52	6.23	4.19	-	-	-
Critical Hdwy Stg 1	5.52	-	-	-	-	-
Critical Hdwy Stg 2	5.52	-	-	-	-	-
Follow-up Hdwy	3.608	3.327	2.281	-	-	-
Pot Cap-1 Maneuver	241	719	1255	-	-	-
Stage 1	715	-	-	-	-	-
Stage 2	459	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	182	719	1255	-	-	-
Mov Cap-2 Maneuver	182	-	-	-	-	-
Stage 1	541	-	-	-	-	-
Stage 2	459	-	-	-	-	-

Approach	EB	NE	SW
HCM Control Delay, s	12.7	5.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NEL	NET	EBLn1	SWT	SWR
Capacity (veh/h)	1255	-	889	-	-
HCM Lane V/C Ratio	0.22	-	0.48	-	-
HCM Control Delay (s)	8.7	0	12.7	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.8	-	2.6	-	-

Intersection	
Int Delay, s/veh	2.5

Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	26	206	406	285	59	35
Future Vol, veh/h	26	206	406	285	59	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	77	77	84	84	81	81
Heavy Vehicles, %	4	0	0	5	5	1
Mvmt Flow	34	268	483	339	73	43

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	822	0	-	0	989	653
Stage 1	-	-	-	-	653	-
Stage 2	-	-	-	-	336	-
Critical Hdwy	4.14	-	-	-	6.45	6.21
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	2.236	-	-	-	3.545	3.309
Pot Cap-1 Maneuver	799	-	-	-	270	469
Stage 1	-	-	-	-	512	-
Stage 2	-	-	-	-	717	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	799	-	-	-	257	469
Mov Cap-2 Maneuver	-	-	-	-	257	-
Stage 1	-	-	-	-	486	-
Stage 2	-	-	-	-	717	-

Approach	NB	SB	NE
HCM Control Delay, s	1.1	0	23.5
HCM LOS			C

Minor Lane/Major Mvmt	NELn1	NBL	NBT	SBT	SBR
Capacity (veh/h)	309	799	-	-	-
HCM Lane V/C Ratio	0.376	0.042	-	-	-
HCM Control Delay (s)	23.5	9.7	0	-	-
HCM Lane LOS	C	A	A	-	-
HCM 95th %tile Q(veh)	1.7	0.1	-	-	-

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	37	70	48	235	673	344
Future Vol, veh/h	37	70	48	235	673	344
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	125	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	88	88	91	91
Heavy Vehicles, %	29	14	10	7	7	2
Mvmt Flow	40	76	55	267	740	378

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1306	929	1118	0	-	0
Stage 1	929	-	-	-	-	-
Stage 2	377	-	-	-	-	-
Critical Hdwy	6.69	6.34	4.2	-	-	-
Critical Hdwy Stg 1	5.69	-	-	-	-	-
Critical Hdwy Stg 2	5.69	-	-	-	-	-
Follow-up Hdwy	3.761	3.426	2.29	-	-	-
Pot Cap-1 Maneuver	155	308	596	-	-	-
Stage 1	344	-	-	-	-	-
Stage 2	638	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	138	308	596	-	-	-
Mov Cap-2 Maneuver	138	-	-	-	-	-
Stage 1	307	-	-	-	-	-
Stage 2	638	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	27.8	2	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	596	-	138	308	-	-
HCM Lane V/C Ratio	0.092	-	0.291	0.247	-	-
HCM Control Delay (s)	11.6	0	41.5	20.5	-	-
HCM Lane LOS	B	A	E	C	-	-
HCM 95th %tile Q(veh)	0.3	-	1.1	1	-	-

Intersection	
Int Delay, s/veh	3.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	67	32	92	110	16	63
Future Vol, veh/h	67	32	92	110	16	63
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	0	50	-	-	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	83	83	84	84	78	78
Heavy Vehicles, %	26	10	25	13	0	37
Mvmt Flow	81	39	110	131	21	81

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	299	176	0	0	241	0
Stage 1	176	-	-	-	-	-
Stage 2	123	-	-	-	-	-
Critical Hdwy	6.66	6.3	-	-	4.1	-
Critical Hdwy Stg 1	5.66	-	-	-	-	-
Critical Hdwy Stg 2	5.66	-	-	-	-	-
Follow-up Hdwy	3.734	3.39	-	-	2.2	-
Pot Cap-1 Maneuver	645	847	-	-	1337	-
Stage 1	800	-	-	-	-	-
Stage 2	846	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	635	847	-	-	1337	-
Mov Cap-2 Maneuver	635	-	-	-	-	-
Stage 1	800	-	-	-	-	-
Stage 2	832	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.9	0	1.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	635	847	1337	-
HCM Lane V/C Ratio	-	-	0.127	0.046	0.015	-
HCM Control Delay (s)	-	-	11.5	9.5	7.7	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.4	0.1	0	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	2	6	196	417	7
Future Vol, veh/h	5	2	6	196	417	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	50	50	31	80	88	63
Heavy Vehicles, %	0	0	0	7	4	0
Mvmt Flow	10	4	19	245	474	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	763	480	485	0	-	0
Stage 1	480	-	-	-	-	-
Stage 2	283	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	375	590	1088	-	-	-
Stage 1	627	-	-	-	-	-
Stage 2	770	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	368	590	1088	-	-	-
Mov Cap-2 Maneuver	368	-	-	-	-	-
Stage 1	614	-	-	-	-	-
Stage 2	770	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14	0.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1088	-	412	-	-
HCM Lane V/C Ratio	0.018	-	0.034	-	-
HCM Control Delay (s)	8.4	0	14	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	11	8	195	6	4	438
Future Vol, veh/h	11	8	195	6	4	438
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	85	85	92	92
Heavy Vehicles, %	0	0	2	2	2	2
Mvmt Flow	14	10	229	7	4	476

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	717	233	0	0	236	0
Stage 1	233	-	-	-	-	-
Stage 2	484	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.12	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.218	-
Pot Cap-1 Maneuver	399	811	-	-	1331	-
Stage 1	810	-	-	-	-	-
Stage 2	624	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	397	811	-	-	1331	-
Mov Cap-2 Maneuver	397	-	-	-	-	-
Stage 1	810	-	-	-	-	-
Stage 2	622	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.5	0	0.1
HCM LOS	B		

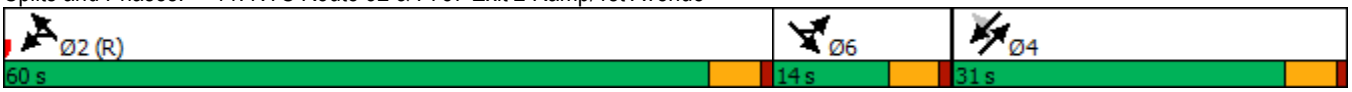
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	506	1331	-
HCM Lane V/C Ratio	-	-	0.047	0.003	-
HCM Control Delay (s)	-	-	12.5	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	3	0	30	450	53	90	8	69	0	0	111	4
Future Volume (vph)	3	0	30	450	53	90	8	69	0	0	111	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.88										
Frt		0.878			0.906						0.995	
Flt Protected		0.995		0.950				0.995				
Satd. Flow (prot)	0	1380	0	1444	1426	0	0	1645	0	0	1599	0
Flt Permitted		0.995		0.950				0.961				
Satd. Flow (perm)	0	1368	0	1444	1426	0	0	1589	0	0	1599	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		73			101						2	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		181			194			438			445	
Travel Time (s)		4.9			5.3			11.9			12.1	
Confl. Peds. (#/hr)	19		19									
Peak Hour Factor	0.82	0.82	0.82	0.89	0.89	0.89	0.91	0.91	0.91	0.78	0.78	0.78
Heavy Vehicles (%)	0%	0%	7%	25%	0%	33%	14%	15%	0%	0%	18%	25%
Adj. Flow (vph)	4	0	37	506	60	101	9	76	0	0	142	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	41	0	506	161	0	0	85	0	0	147	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Split	NA		Split	NA		Perm	NA			NA	
Protected Phases	6	6		2	2			4			4	
Permitted Phases							4					
Detector Phase	6	6		2	2		4	4			4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0			5.0	
Minimum Split (s)	14.0	14.0		24.0	24.0		24.0	24.0			24.0	
Total Split (s)	14.0	14.0		60.0	60.0		31.0	31.0			31.0	
Total Split (%)	13.3%	13.3%		57.1%	57.1%		29.5%	29.5%			29.5%	
Maximum Green (s)	9.0	9.0		55.0	55.0		26.0	26.0			26.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0			1.0	
Lost Time Adjust (s)		0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)		5.0		5.0	5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Recall Mode	None	None		C-Max	C-Max		None	None			None	
Act Effct Green (s)		5.7		73.7	73.7			14.8			14.8	

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Actuated g/C Ratio		0.05		0.70	0.70			0.14			0.14	
v/c Ratio		0.28		0.50	0.16			0.38			0.65	
Control Delay		8.4		11.3	3.6			44.5			54.7	
Queue Delay		0.0		0.0	0.0			0.0			0.0	
Total Delay		8.4		11.3	3.6			44.5			54.7	
LOS		A		B	A			D			D	
Approach Delay		8.4			9.5			44.5			54.7	
Approach LOS		A			A			D			D	
Queue Length 50th (ft)		0		159	13			53			93	
Queue Length 95th (ft)		7		294	43			95			127	
Internal Link Dist (ft)		101			114			358			365	
Turn Bay Length (ft)												
Base Capacity (vph)		185		1012	1030			393			397	
Starvation Cap Reductn		0		0	0			0			0	
Spillback Cap Reductn		0		0	0			0			0	
Storage Cap Reductn		0		0	0			0			0	
Reduced v/c Ratio		0.22		0.50	0.16			0.22			0.37	

Intersection Summary			
Area Type:	Other		
Cycle Length: 105			
Actuated Cycle Length: 105			
Offset: 0 (0%), Referenced to phase 2:NWTL, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.65			
Intersection Signal Delay: 19.7		Intersection LOS: B	
Intersection Capacity Utilization 50.3%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 11: NYS Route 32 & I-787 Exit 2 Ramp/1st Avenue



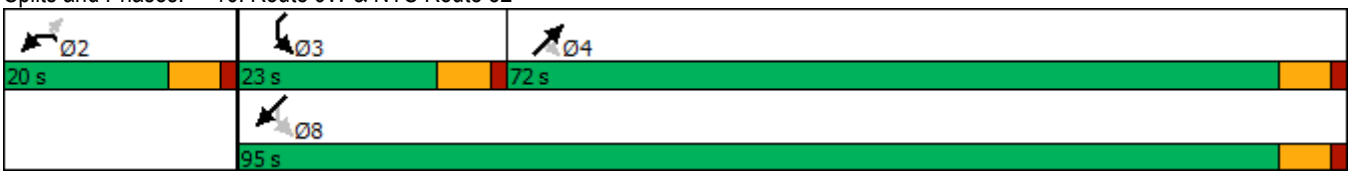
Lane Group	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Volume (vph)	97	168	2035	171	126	821
Future Volume (vph)	97	168	2035	171	126	821
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	75		200	100	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1530	1442	3505	1482	1388	3406
Flt Permitted	0.950				0.055	
Satd. Flow (perm)	1530	1442	3505	1482	80	3406
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		193		106		
Link Speed (mph)	45		45			45
Link Distance (ft)	1257		583			1004
Travel Time (s)	19.0		8.8			15.2
Peak Hour Factor	0.87	0.87	0.93	0.93	0.85	0.85
Heavy Vehicles (%)	18%	12%	3%	9%	30%	6%
Adj. Flow (vph)	111	193	2188	184	148	966
Shared Lane Traffic (%)						
Lane Group Flow (vph)	111	193	2188	184	148	966
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Turn Type	Prot	Perm	NA	Perm	pm+pt	NA
Protected Phases	2		4		3	8
Permitted Phases		2		4	8	8
Detector Phase	2	2	4	4	3	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	17.0	17.0	24.0	24.0	11.0	11.0
Total Split (s)	20.0	20.0	72.0	72.0	23.0	95.0
Total Split (%)	17.4%	17.4%	62.6%	62.6%	20.0%	82.6%
Maximum Green (s)	14.0	14.0	66.0	66.0	17.0	89.0
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	Max	None	None	None	None

Lane Group	NWL	NWR	NET	NER	SWL	SWT
Act Effct Green (s)	14.0	14.0	66.1	66.1	84.3	84.3
Actuated g/C Ratio	0.13	0.13	0.60	0.60	0.76	0.76
v/c Ratio	0.57	0.55	1.04	0.20	0.72	0.37
Control Delay	58.9	13.0	54.9	5.3	44.8	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.9	13.0	54.9	5.3	44.8	4.7
LOS	E	B	D	A	D	A
Approach Delay	29.8		51.0			10.0
Approach LOS	C		D			B
Queue Length 50th (ft)	75	0	~888	22	61	98
Queue Length 95th (ft)	135	60	#1096	58	121	113
Internal Link Dist (ft)	1177		503			924
Turn Bay Length (ft)		75		200	100	
Base Capacity (vph)	194	351	2100	930	263	2752
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.55	1.04	0.20	0.56	0.35

Intersection Summary

Area Type: Other
Cycle Length: 115
Actuated Cycle Length: 110.3
Natural Cycle: 90
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.04
Intersection Signal Delay: 37.3 Intersection LOS: D
Intersection Capacity Utilization 83.6% ICU Level of Service E
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 16: Route 9W & NYS Route 32





Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	32	71	717	64	104	258
Future Volume (vph)	32	71	717	64	104	258
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.907		0.989			
Flt Protected	0.985					0.986
Satd. Flow (prot)	927	0	1581	0	0	1351
Flt Permitted	0.985					0.579
Satd. Flow (perm)	927	0	1581	0	0	793
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	95		11			
Link Speed (mph)	30		30			30
Link Distance (ft)	421		375			362
Travel Time (s)	9.6		8.5			8.2
Peak Hour Factor	0.75	0.75	0.87	0.87	0.90	0.84
Heavy Vehicles (%)	60%	67%	6%	18%	35%	21%
Adj. Flow (vph)	43	95	824	74	116	307
Shared Lane Traffic (%)						
Lane Group Flow (vph)	138	0	898	0	0	423
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (mph)	15	9		9	15	
Turn Type	Perm		NA		Perm	NA
Protected Phases			2			2
Permitted Phases	8				2	
Detector Phase	8		2		2	2
Switch Phase						
Minimum Initial (s)	5.0		5.0		5.0	5.0
Minimum Split (s)	23.0		23.0		23.0	23.0
Total Split (s)	25.0		45.0		45.0	45.0
Total Split (%)	35.7%		64.3%		64.3%	64.3%
Maximum Green (s)	20.0		40.0		40.0	40.0
Yellow Time (s)	3.5		3.5		3.5	3.5
All-Red Time (s)	1.5		1.5		1.5	1.5
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	5.0		5.0			5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		Max		Max	Max
Walk Time (s)	7.0		7.0		7.0	7.0
Flash Dont Walk (s)	11.0		11.0		11.0	11.0
Pedestrian Calls (#/hr)	0		0		0	0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Act Effct Green (s)	9.7		48.4			48.4
Actuated g/C Ratio	0.15		0.75			0.75
v/c Ratio	0.63		0.76			0.71
Control Delay	22.8		14.7			18.5
Queue Delay	0.0		0.0			0.0
Total Delay	22.8		14.7			18.5
LOS	C		B			B
Approach Delay	22.8		14.7			18.5
Approach LOS	C		B			B
Queue Length 50th (ft)	16		179			79
Queue Length 95th (ft)	40		#547			#287
Internal Link Dist (ft)	341		295			282
Turn Bay Length (ft)						
Base Capacity (vph)	352		1184			592
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.39		0.76			0.71

Intersection Summary			
Area Type:	CBD		
Cycle Length: 70			
Actuated Cycle Length: 64.7			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 16.5		Intersection LOS: B	
Intersection Capacity Utilization 87.0%		ICU Level of Service E	
Analysis Period (min) 15			

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 20: NYS Route 32 & South Port Road



Intersection	
Int Delay, s/veh	6.8

Movement	EBL	EBR	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	62	229	325	346	82	130
Future Vol, veh/h	62	229	325	346	82	130
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	Yield
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	91	91	88	88
Heavy Vehicles, %	9	20	10	10	18	17
Mvmt Flow	69	254	357	380	93	148

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1261	167	93	0	-	0
Stage 1	167	-	-	-	-	-
Stage 2	1094	-	-	-	-	-
Critical Hdwy	6.49	6.4	4.2	-	-	-
Critical Hdwy Stg 1	5.49	-	-	-	-	-
Critical Hdwy Stg 2	5.49	-	-	-	-	-
Follow-up Hdwy	3.581	3.48	2.29	-	-	-
Pot Cap-1 Maneuver	182	832	1453	-	-	-
Stage 1	846	-	-	-	-	-
Stage 2	311	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	125	832	1453	-	-	-
Mov Cap-2 Maneuver	125	-	-	-	-	-
Stage 1	583	-	-	-	-	-
Stage 2	311	-	-	-	-	-

Approach	EB	NE	SW
HCM Control Delay, s	18.4	4	0
HCM LOS	C		

Minor Lane/Major Mvmt	NEL	NET	EBLn1	SWT	SWR
Capacity (veh/h)	1453	-	587	-	-
HCM Lane V/C Ratio	0.246	-	0.551	-	-
HCM Control Delay (s)	8.3	0	18.4	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	1	-	3.3	-	-

Intersection	
Int Delay, s/veh	12

Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	23	545	200	62	170	23
Future Vol, veh/h	23	545	200	62	170	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	81	81	83	83
Heavy Vehicles, %	3	0	22	10	12	11
Mvmt Flow	27	649	247	77	205	28

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	324	0	-	0	989	286
Stage 1	-	-	-	-	286	-
Stage 2	-	-	-	-	703	-
Critical Hdwy	4.13	-	-	-	6.52	6.31
Critical Hdwy Stg 1	-	-	-	-	5.52	-
Critical Hdwy Stg 2	-	-	-	-	5.52	-
Follow-up Hdwy	2.227	-	-	-	3.608	3.399
Pot Cap-1 Maneuver	1230	-	-	-	262	732
Stage 1	-	-	-	-	740	-
Stage 2	-	-	-	-	473	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1230	-	-	-	253	732
Mov Cap-2 Maneuver	-	-	-	-	253	-
Stage 1	-	-	-	-	715	-
Stage 2	-	-	-	-	473	-

Approach	NB	SB	NE
HCM Control Delay, s	0.3	0	62.7
HCM LOS			F

Minor Lane/Major Mvmt	NELn1	NBL	NBT	SBT	SBR
Capacity (veh/h)	274	1230	-	-	-
HCM Lane V/C Ratio	0.849	0.022	-	-	-
HCM Control Delay (s)	62.7	8	0	-	-
HCM Lane LOS	F	A	A	-	-
HCM 95th %tile Q(veh)	7.1	0.1	-	-	-

Intersection	
Int Delay, s/veh	9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	127	54	59	652	205	66
Future Vol, veh/h	127	54	59	652	205	66
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	125	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	86	86	90	90
Heavy Vehicles, %	13	28	20	9	23	28
Mvmt Flow	146	62	69	758	228	73

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1161	265	301	0	-	0
Stage 1	265	-	-	-	-	-
Stage 2	896	-	-	-	-	-
Critical Hdwy	6.53	6.48	4.3	-	-	-
Critical Hdwy Stg 1	5.53	-	-	-	-	-
Critical Hdwy Stg 2	5.53	-	-	-	-	-
Follow-up Hdwy	3.617	3.552	2.38	-	-	-
Pot Cap-1 Maneuver	205	715	1164	-	-	-
Stage 1	755	-	-	-	-	-
Stage 2	381	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	184	715	1164	-	-	-
Mov Cap-2 Maneuver	184	-	-	-	-	-
Stage 1	678	-	-	-	-	-
Stage 2	381	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	54.8	0.7	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1164	-	184	715	-	-
HCM Lane V/C Ratio	0.059	-	0.793	0.087	-	-
HCM Control Delay (s)	8.3	0	73.7	10.5	-	-
HCM Lane LOS	A	A	F	B	-	-
HCM 95th %tile Q(veh)	0.2	-	5.4	0.3	-	-

Intersection	
Int Delay, s/veh	7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	134	7	47	54	43	60
Future Vol, veh/h	134	7	47	54	43	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	0	50	-	-	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	65	65	84	84	62	62
Heavy Vehicles, %	25	17	42	42	0	25
Mvmt Flow	206	11	56	64	69	97

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	323	88	0	0	120	0
Stage 1	88	-	-	-	-	-
Stage 2	235	-	-	-	-	-
Critical Hdwy	6.65	6.37	-	-	4.1	-
Critical Hdwy Stg 1	5.65	-	-	-	-	-
Critical Hdwy Stg 2	5.65	-	-	-	-	-
Follow-up Hdwy	3.725	3.453	-	-	2.2	-
Pot Cap-1 Maneuver	626	930	-	-	1480	-
Stage 1	881	-	-	-	-	-
Stage 2	753	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	597	930	-	-	1480	-
Mov Cap-2 Maneuver	597	-	-	-	-	-
Stage 1	881	-	-	-	-	-
Stage 2	718	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.9	0	3.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	597	930	1480	-
HCM Lane V/C Ratio	-	-	0.345	0.012	0.047	-
HCM Control Delay (s)	-	-	14.2	8.9	7.6	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	1.5	0	0.1	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	14	3	489	186	3
Future Vol, veh/h	9	14	3	489	186	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	42	81	75	72	93	25
Heavy Vehicles, %	0	8	0	8	20	0
Mvmt Flow	21	17	4	679	200	12

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	893	206	212	0	-	0
Stage 1	206	-	-	-	-	-
Stage 2	687	-	-	-	-	-
Critical Hdwy	6.4	6.28	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.372	2.2	-	-	-
Pot Cap-1 Maneuver	315	820	1370	-	-	-
Stage 1	833	-	-	-	-	-
Stage 2	503	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	313	820	1370	-	-	-
Mov Cap-2 Maneuver	313	-	-	-	-	-
Stage 1	829	-	-	-	-	-
Stage 2	503	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.2	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1370	-	432	-	-
HCM Lane V/C Ratio	0.003	-	0.09	-	-
HCM Control Delay (s)	7.6	0	14.2	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	11	7	479	18	12	210
Future Vol, veh/h	11	7	479	18	12	210
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	92	92	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	9	521	20	14	247

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	806	531	0	0	541	0
Stage 1	531	-	-	-	-	-
Stage 2	275	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	351	548	-	-	1028	-
Stage 1	590	-	-	-	-	-
Stage 2	771	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	345	548	-	-	1028	-
Mov Cap-2 Maneuver	345	-	-	-	-	-
Stage 1	590	-	-	-	-	-
Stage 2	759	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.5	0	0.5
HCM LOS	B		

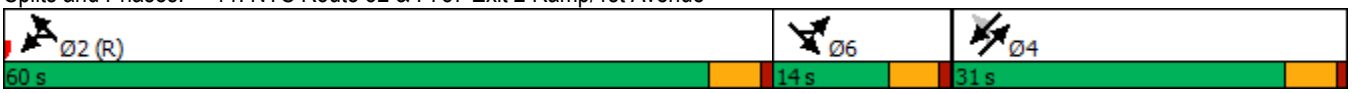
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	403	1028	-
HCM Lane V/C Ratio	-	-	0.056	0.014	-
HCM Control Delay (s)	-	-	14.5	8.6	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	2	0	47	910	101	60	6	76	0	0	210	9
Future Volume (vph)	2	0	47	910	101	60	6	76	0	0	210	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.87										
Frt		0.871			0.944						0.994	
Flt Protected		0.998		0.950				0.996				
Satd. Flow (prot)	0	1358	0	1719	1754	0	0	1688	0	0	1715	0
Flt Permitted		0.998		0.950				0.973				
Satd. Flow (perm)	0	1353	0	1719	1754	0	0	1649	0	0	1715	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		73			43						2	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		181			194			438			445	
Travel Time (s)		4.9			5.3			11.9			12.1	
Confl. Peds. (#/hr)	19		19									
Peak Hour Factor	0.73	0.73	0.73	0.90	0.90	0.90	0.83	0.83	0.83	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	7%	5%	0%	6%	0%	13%	0%	0%	10%	13%
Adj. Flow (vph)	3	0	64	1011	112	67	7	92	0	0	228	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	67	0	1011	179	0	0	99	0	0	238	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Split	NA		Split	NA		Perm	NA			NA	
Protected Phases	6	6		2	2			4			4	
Permitted Phases							4					
Detector Phase	6	6		2	2		4	4			4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0			5.0	
Minimum Split (s)	14.0	14.0		24.0	24.0		24.0	24.0			24.0	
Total Split (s)	14.0	14.0		60.0	60.0		31.0	31.0			31.0	
Total Split (%)	13.3%	13.3%		57.1%	57.1%		29.5%	29.5%			29.5%	
Maximum Green (s)	9.0	9.0		55.0	55.0		26.0	26.0			26.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0			1.0	
Lost Time Adjust (s)		0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)		5.0		5.0	5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Recall Mode	None	None		C-Max	C-Max		None	None			None	
Act Effct Green (s)		6.5		66.1	66.1			19.5			19.5	

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Actuated g/C Ratio		0.06		0.63	0.63			0.19			0.19	
v/c Ratio		0.44		0.94	0.16			0.32			0.74	
Control Delay		19.1		36.9	8.1			38.4			53.8	
Queue Delay		0.0		0.0	0.0			0.0			0.0	
Total Delay		19.1		36.9	8.1			38.4			53.8	
LOS		B		D	A			D			D	
Approach Delay		19.1			32.6			38.4			53.8	
Approach LOS		B			C			D			D	
Queue Length 50th (ft)		0		584	35			58			151	
Queue Length 95th (ft)		22		#1031	83			91			220	
Internal Link Dist (ft)		101			114			358			365	
Turn Bay Length (ft)												
Base Capacity (vph)		183		1081	1119			408			426	
Starvation Cap Reductn		0		0	0			0			0	
Spillback Cap Reductn		0		0	0			0			0	
Storage Cap Reductn		0		0	0			0			0	
Reduced v/c Ratio		0.37		0.94	0.16			0.24			0.56	

Intersection Summary			
Area Type:	Other		
Cycle Length: 105			
Actuated Cycle Length: 105			
Offset: 0 (0%), Referenced to phase 2:NWTL, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.94			
Intersection Signal Delay: 35.5		Intersection LOS: D	
Intersection Capacity Utilization 77.0%		ICU Level of Service D	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 11: NYS Route 32 & I-787 Exit 2 Ramp/1st Avenue



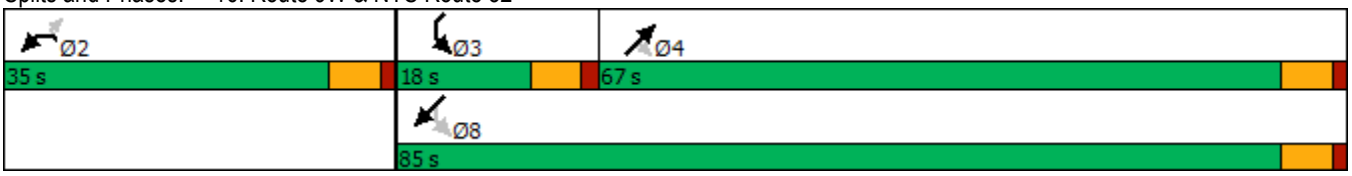
Lane Group	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Volume (vph)	299	130	1081	96	103	1439
Future Volume (vph)	299	130	1081	96	103	1439
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	75		200	100	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1719	1455	3471	1509	1583	3539
Flt Permitted	0.950				0.088	
Satd. Flow (perm)	1719	1455	3471	1509	147	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		69		92		
Link Speed (mph)	45		45			45
Link Distance (ft)	1257		583			1004
Travel Time (s)	19.0		8.8			15.2
Peak Hour Factor	0.91	0.91	0.91	0.91	0.94	0.94
Heavy Vehicles (%)	5%	11%	4%	7%	14%	2%
Adj. Flow (vph)	329	143	1188	105	110	1531
Shared Lane Traffic (%)						
Lane Group Flow (vph)	329	143	1188	105	110	1531
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Turn Type	Prot	Perm	NA	Perm	pm+pt	NA
Protected Phases	2		4		3	8
Permitted Phases		2		4	8	8
Detector Phase	2	2	4	4	3	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	17.0	17.0	24.0	24.0	11.0	11.0
Total Split (s)	35.0	35.0	67.0	67.0	18.0	85.0
Total Split (%)	29.2%	29.2%	55.8%	55.8%	15.0%	70.8%
Maximum Green (s)	29.0	29.0	61.0	61.0	12.0	79.0
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	Max	None	None	None	None

Lane Group	NWL	NWR	NET	NER	SWL	SWT
Act Effct Green (s)	29.4	29.4	41.4	41.4	55.9	55.9
Actuated g/C Ratio	0.30	0.30	0.43	0.43	0.57	0.57
v/c Ratio	0.64	0.29	0.81	0.15	0.53	0.75
Control Delay	38.6	18.1	29.1	4.9	21.2	17.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.6	18.1	29.1	4.9	21.2	17.9
LOS	D	B	C	A	C	B
Approach Delay	32.4		27.1			18.1
Approach LOS	C		C			B
Queue Length 50th (ft)	173	33	326	5	29	345
Queue Length 95th (ft)	#351	101	421	34	71	420
Internal Link Dist (ft)	1177		503			924
Turn Bay Length (ft)		75		200	100	
Base Capacity (vph)	518	486	2200	990	263	2905
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.29	0.54	0.11	0.42	0.53

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 97.4			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 23.5		Intersection LOS: C	
Intersection Capacity Utilization 67.2%		ICU Level of Service C	
Analysis Period (min) 15			

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 16: Route 9W & NYS Route 32





Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	101	95	253	28	46	930
Future Volume (vph)	101	95	253	28	46	930
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.935		0.986			
Flt Protected	0.975					0.998
Satd. Flow (prot)	1597	0	1670	0	0	1778
Flt Permitted	0.975					0.968
Satd. Flow (perm)	1597	0	1670	0	0	1724
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	68		13			
Link Speed (mph)	30		30			30
Link Distance (ft)	421		375			362
Travel Time (s)	9.6		8.5			8.2
Peak Hour Factor	0.85	0.85	0.72	0.72	0.94	0.94
Heavy Vehicles (%)	8%	9%	8%	50%	40%	5%
Adj. Flow (vph)	119	112	351	39	49	989
Shared Lane Traffic (%)						
Lane Group Flow (vph)	231	0	390	0	0	1038
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Turn Type	Perm		NA		Perm	NA
Protected Phases			2			2
Permitted Phases	8				2	
Detector Phase	8		2		2	2
Switch Phase						
Minimum Initial (s)	5.0		5.0		5.0	5.0
Minimum Split (s)	23.0		23.0		23.0	23.0
Total Split (s)	25.0		45.0		45.0	45.0
Total Split (%)	35.7%		64.3%		64.3%	64.3%
Maximum Green (s)	20.0		40.0		40.0	40.0
Yellow Time (s)	3.5		3.5		3.5	3.5
All-Red Time (s)	1.5		1.5		1.5	1.5
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	5.0		5.0			5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		Max		Max	Max
Walk Time (s)	7.0		7.0		7.0	7.0
Flash Dont Walk (s)	11.0		11.0		11.0	11.0
Pedestrian Calls (#/hr)	0		0		0	0



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Act Effct Green (s)	12.1		43.2			43.2
Actuated g/C Ratio	0.19		0.66			0.66
v/c Ratio	0.66		0.35			0.91
Control Delay	25.6		6.7			26.1
Queue Delay	0.0		0.0			0.0
Total Delay	25.6		6.7			26.1
LOS	C		A			C
Approach Delay	25.6		6.7			26.1
Approach LOS	C		A			C
Queue Length 50th (ft)	56		53			285
Queue Length 95th (ft)	107		93			#695
Internal Link Dist (ft)	341		295			282
Turn Bay Length (ft)						
Base Capacity (vph)	537		1108			1139
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.43		0.35			0.91

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 65.4			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.91			
Intersection Signal Delay: 21.4		Intersection LOS: C	
Intersection Capacity Utilization 90.4%		ICU Level of Service E	
Analysis Period (min) 15			

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 20: NYS Route 32 & South Port Road



Intersection	
Int Delay, s/veh	6.2

Movement	EBL	EBR	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	68	283	204	136	236	87
Future Vol, veh/h	68	283	204	136	236	87
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	Yield
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	74	74	85	85
Heavy Vehicles, %	12	3	9	8	4	8
Mvmt Flow	83	345	276	184	278	102

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1065	329	278	0	-	0
Stage 1	329	-	-	-	-	-
Stage 2	736	-	-	-	-	-
Critical Hdwy	6.52	6.23	4.19	-	-	-
Critical Hdwy Stg 1	5.52	-	-	-	-	-
Critical Hdwy Stg 2	5.52	-	-	-	-	-
Follow-up Hdwy	3.608	3.327	2.281	-	-	-
Pot Cap-1 Maneuver	236	710	1246	-	-	-
Stage 1	707	-	-	-	-	-
Stage 2	456	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	178	710	1246	-	-	-
Mov Cap-2 Maneuver	178	-	-	-	-	-
Stage 1	532	-	-	-	-	-
Stage 2	456	-	-	-	-	-

Approach	EB	NE	SW
HCM Control Delay, s	12.9	5.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NEL	NET	EBLn1	SWT	SWR
Capacity (veh/h)	1246	-	881	-	-
HCM Lane V/C Ratio	0.221	-	0.486	-	-
HCM Control Delay (s)	8.7	0	12.9	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.8	-	2.7	-	-

Intersection	
Int Delay, s/veh	2.6

Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	30	209	408	285	59	37
Future Vol, veh/h	30	209	408	285	59	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	77	77	84	84	81	81
Heavy Vehicles, %	4	0	0	5	5	1
Mvmt Flow	39	271	486	339	73	46

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	825	0	-	0	1005	656
Stage 1	-	-	-	-	656	-
Stage 2	-	-	-	-	349	-
Critical Hdwy	4.14	-	-	-	6.45	6.21
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	2.236	-	-	-	3.545	3.309
Pot Cap-1 Maneuver	797	-	-	-	264	467
Stage 1	-	-	-	-	511	-
Stage 2	-	-	-	-	707	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	797	-	-	-	249	467
Mov Cap-2 Maneuver	-	-	-	-	249	-
Stage 1	-	-	-	-	481	-
Stage 2	-	-	-	-	707	-

Approach	NB	SB	NE
HCM Control Delay, s	1.2	0	24.2
HCM LOS			C

Minor Lane/Major Mvmt	NELn1	NBL	NBT	SBT	SBR
Capacity (veh/h)	304	797	-	-	-
HCM Lane V/C Ratio	0.39	0.049	-	-	-
HCM Control Delay (s)	24.2	9.7	0	-	-
HCM Lane LOS	C	A	A	-	-
HCM 95th %tile Q(veh)	1.8	0.2	-	-	-

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	45	72	52	235	673	359
Future Vol, veh/h	45	72	52	235	673	359
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	125	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	88	88	91	91
Heavy Vehicles, %	29	14	10	7	7	2
Mvmt Flow	49	78	59	267	740	395

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1323	938	1135	0	-	0
Stage 1	938	-	-	-	-	-
Stage 2	385	-	-	-	-	-
Critical Hdwy	6.69	6.34	4.2	-	-	-
Critical Hdwy Stg 1	5.69	-	-	-	-	-
Critical Hdwy Stg 2	5.69	-	-	-	-	-
Follow-up Hdwy	3.761	3.426	2.29	-	-	-
Pot Cap-1 Maneuver	151	305	587	-	-	-
Stage 1	341	-	-	-	-	-
Stage 2	633	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	133	305	587	-	-	-
Mov Cap-2 Maneuver	133	-	-	-	-	-
Stage 1	301	-	-	-	-	-
Stage 2	633	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	30.9	2.1	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	587	-	133	305	-	-
HCM Lane V/C Ratio	0.101	-	0.368	0.257	-	-
HCM Control Delay (s)	11.8	0	47	20.8	-	-
HCM Lane LOS	B	A	E	C	-	-
HCM 95th %tile Q(veh)	0.3	-	1.5	1	-	-

Intersection	
Int Delay, s/veh	3.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	74	32	96	124	16	66
Future Vol, veh/h	74	32	96	124	16	66
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	0	50	-	-	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	83	83	84	84	78	78
Heavy Vehicles, %	26	10	25	13	0	37
Mvmt Flow	89	39	114	148	21	85

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	315	188	0	0	262	0
Stage 1	188	-	-	-	-	-
Stage 2	127	-	-	-	-	-
Critical Hdwy	6.66	6.3	-	-	4.1	-
Critical Hdwy Stg 1	5.66	-	-	-	-	-
Critical Hdwy Stg 2	5.66	-	-	-	-	-
Follow-up Hdwy	3.734	3.39	-	-	2.2	-
Pot Cap-1 Maneuver	631	834	-	-	1314	-
Stage 1	790	-	-	-	-	-
Stage 2	843	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	621	834	-	-	1314	-
Mov Cap-2 Maneuver	621	-	-	-	-	-
Stage 1	790	-	-	-	-	-
Stage 2	830	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.1	0	1.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	621	834	1314	-
HCM Lane V/C Ratio	-	-	0.144	0.046	0.016	-
HCM Control Delay (s)	-	-	11.8	9.5	7.8	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.5	0.1	0	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	2	6	201	427	9
Future Vol, veh/h	6	2	6	201	427	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	50	50	31	80	88	63
Heavy Vehicles, %	0	0	0	7	4	0
Mvmt Flow	12	4	19	251	485	14

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	781	492	499	0	-	0
Stage 1	492	-	-	-	-	-
Stage 2	289	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	366	581	1075	-	-	-
Stage 1	619	-	-	-	-	-
Stage 2	765	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	358	581	1075	-	-	-
Mov Cap-2 Maneuver	358	-	-	-	-	-
Stage 1	606	-	-	-	-	-
Stage 2	765	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.5	0.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1075	-	396	-	-
HCM Lane V/C Ratio	0.018	-	0.04	-	-
HCM Control Delay (s)	8.4	0	14.5	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	23	15	195	11	7	437
Future Vol, veh/h	23	15	195	11	7	437
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	85	85	92	92
Heavy Vehicles, %	0	0	2	2	2	2
Mvmt Flow	29	19	229	13	8	475

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	727	236	0	0	242	0
Stage 1	236	-	-	-	-	-
Stage 2	491	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.12	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.218	-
Pot Cap-1 Maneuver	394	808	-	-	1324	-
Stage 1	808	-	-	-	-	-
Stage 2	619	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	391	808	-	-	1324	-
Mov Cap-2 Maneuver	391	-	-	-	-	-
Stage 1	808	-	-	-	-	-
Stage 2	614	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.1	0	0.1
HCM LOS	B		

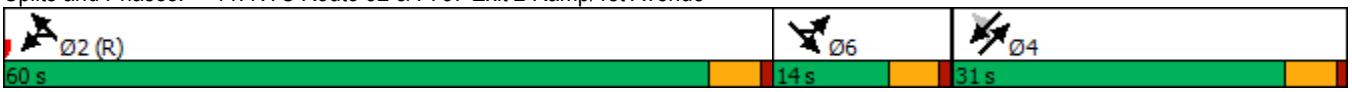
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	491	1324	-
HCM Lane V/C Ratio	-	-	0.097	0.006	-
HCM Control Delay (s)	-	-	13.1	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0	-

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	3	0	30	500	53	90	8	75	0	0	122	4
Future Volume (vph)	3	0	30	500	53	90	8	75	0	0	122	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.88										
Frt		0.878			0.906						0.996	
Flt Protected		0.995		0.950				0.995				
Satd. Flow (prot)	0	1380	0	1444	1426	0	0	1645	0	0	1601	0
Flt Permitted		0.995		0.950				0.963				
Satd. Flow (perm)	0	1368	0	1444	1426	0	0	1592	0	0	1601	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		73			101						1	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		181			194			438			445	
Travel Time (s)		4.9			5.3			11.9			12.1	
Confl. Peds. (#/hr)	19		19									
Peak Hour Factor	0.82	0.82	0.82	0.89	0.89	0.89	0.91	0.91	0.91	0.78	0.78	0.78
Heavy Vehicles (%)	0%	0%	7%	25%	0%	33%	14%	15%	0%	0%	18%	25%
Adj. Flow (vph)	4	0	37	562	60	101	9	82	0	0	156	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	41	0	562	161	0	0	91	0	0	161	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Split	NA		Split	NA		Perm	NA			NA	
Protected Phases	6	6		2	2			4			4	
Permitted Phases							4					
Detector Phase	6	6		2	2		4	4			4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0			5.0	
Minimum Split (s)	14.0	14.0		24.0	24.0		24.0	24.0			24.0	
Total Split (s)	14.0	14.0		60.0	60.0		31.0	31.0			31.0	
Total Split (%)	13.3%	13.3%		57.1%	57.1%		29.5%	29.5%			29.5%	
Maximum Green (s)	9.0	9.0		55.0	55.0		26.0	26.0			26.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0			1.0	
Lost Time Adjust (s)		0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)		5.0		5.0	5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Recall Mode	None	None		C-Max	C-Max		None	None			None	
Act Effct Green (s)		5.7		72.7	72.7			15.8			15.8	

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Actuated g/C Ratio		0.05		0.69	0.69			0.15			0.15	
v/c Ratio		0.28		0.56	0.16			0.38			0.67	
Control Delay		8.4		13.1	3.8			43.4			54.8	
Queue Delay		0.0		0.0	0.0			0.0			0.0	
Total Delay		8.4		13.1	3.8			43.4			54.8	
LOS		A		B	A			D			D	
Approach Delay		8.4			11.1			43.4			54.8	
Approach LOS		A			B			D			D	
Queue Length 50th (ft)		0		194	13			56			103	
Queue Length 95th (ft)		7		358	44			99			137	
Internal Link Dist (ft)		101			114			358			365	
Turn Bay Length (ft)												
Base Capacity (vph)		185		999	1017			394			397	
Starvation Cap Reductn		0		0	0			0			0	
Spillback Cap Reductn		0		0	0			0			0	
Storage Cap Reductn		0		0	0			0			0	
Reduced v/c Ratio		0.22		0.56	0.16			0.23			0.41	

Intersection Summary			
Area Type:	Other		
Cycle Length: 105			
Actuated Cycle Length: 105			
Offset: 0 (0%), Referenced to phase 2:NWTL, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.67			
Intersection Signal Delay: 20.8		Intersection LOS: C	
Intersection Capacity Utilization 53.3%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 11: NYS Route 32 & I-787 Exit 2 Ramp/1st Avenue



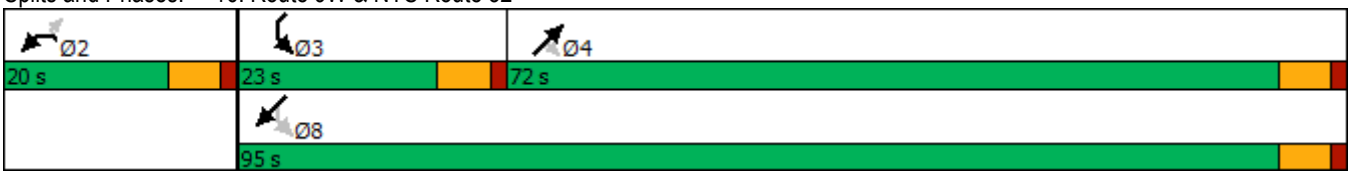
Lane Group	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Volume (vph)	100	181	2035	176	148	821
Future Volume (vph)	100	181	2035	176	148	821
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	75		200	100	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1530	1442	3505	1482	1388	3406
Flt Permitted	0.950				0.055	
Satd. Flow (perm)	1530	1442	3505	1482	80	3406
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		208		108		
Link Speed (mph)	45		45			45
Link Distance (ft)	1257		583			1004
Travel Time (s)	19.0		8.8			15.2
Peak Hour Factor	0.87	0.87	0.93	0.93	0.85	0.85
Heavy Vehicles (%)	18%	12%	3%	9%	30%	6%
Adj. Flow (vph)	115	208	2188	189	174	966
Shared Lane Traffic (%)						
Lane Group Flow (vph)	115	208	2188	189	174	966
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Turn Type	Prot	Perm	NA	Perm	pm+pt	NA
Protected Phases	2		4		3	8
Permitted Phases		2		4	8	8
Detector Phase	2	2	4	4	3	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	17.0	17.0	24.0	24.0	11.0	11.0
Total Split (s)	20.0	20.0	72.0	72.0	23.0	95.0
Total Split (%)	17.4%	17.4%	62.6%	62.6%	20.0%	82.6%
Maximum Green (s)	14.0	14.0	66.0	66.0	17.0	89.0
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	Max	None	None	None	None

Lane Group	NWL	NWR	NET	NER	SWL	SWT
Act Effct Green (s)	14.0	14.0	66.1	66.1	85.6	85.6
Actuated g/C Ratio	0.13	0.13	0.59	0.59	0.77	0.77
v/c Ratio	0.60	0.57	1.05	0.21	0.79	0.37
Control Delay	61.0	13.1	60.0	5.6	52.9	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.0	13.1	60.0	5.6	52.9	4.7
LOS	E	B	E	A	D	A
Approach Delay	30.2		55.7			12.0
Approach LOS	C		E			B
Queue Length 50th (ft)	80	0	~930	24	81	98
Queue Length 95th (ft)	140	63	#1096	60	147	113
Internal Link Dist (ft)	1177		503			924
Turn Bay Length (ft)		75		200	100	
Base Capacity (vph)	192	363	2074	921	260	2718
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.57	1.05	0.21	0.67	0.36

Intersection Summary

Area Type: Other
Cycle Length: 115
Actuated Cycle Length: 111.6
Natural Cycle: 90
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.05
Intersection Signal Delay: 40.6 Intersection LOS: D
Intersection Capacity Utilization 85.0% ICU Level of Service E
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 16: Route 9W & NYS Route 32





Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	45	107	717	85	165	258
Future Volume (vph)	45	107	717	85	165	258
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.905		0.986			
Flt Protected	0.985					0.982
Satd. Flow (prot)	1027	0	1746	0	0	1514
Flt Permitted	0.985					0.370
Satd. Flow (perm)	1027	0	1746	0	0	570
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	143		14			
Link Speed (mph)	30		30			30
Link Distance (ft)	421		375			362
Travel Time (s)	9.6		8.5			8.2
Peak Hour Factor	0.75	0.75	0.87	0.87	0.90	0.84
Heavy Vehicles (%)	60%	67%	6%	18%	27%	21%
Adj. Flow (vph)	60	143	824	98	183	307
Shared Lane Traffic (%)						
Lane Group Flow (vph)	203	0	922	0	0	490
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Turn Type	Perm		NA		Perm	NA
Protected Phases			2			2
Permitted Phases	8				2	
Detector Phase	8		2		2	2
Switch Phase						
Minimum Initial (s)	5.0		5.0		5.0	5.0
Minimum Split (s)	23.0		23.0		23.0	23.0
Total Split (s)	25.0		45.0		45.0	45.0
Total Split (%)	35.7%		64.3%		64.3%	64.3%
Maximum Green (s)	20.0		40.0		40.0	40.0
Yellow Time (s)	3.5		3.5		3.5	3.5
All-Red Time (s)	1.5		1.5		1.5	1.5
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	5.0		5.0			5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		Max		Max	Max
Walk Time (s)	7.0		7.0		7.0	7.0
Flash Dont Walk (s)	11.0		11.0		11.0	11.0
Pedestrian Calls (#/hr)	0		0		0	0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Act Effct Green (s)	10.7		43.9			43.9
Actuated g/C Ratio	0.17		0.68			0.68
v/c Ratio	0.70		0.77			1.27
Control Delay	21.8		15.4			158.1
Queue Delay	0.0		0.0			0.0
Total Delay	21.8		15.4			158.1
LOS	C		B			F
Approach Delay	21.8		15.4			158.1
Approach LOS	C		B			F
Queue Length 50th (ft)	20		177			~229
Queue Length 95th (ft)	49		#560			#294
Internal Link Dist (ft)	341		295			282
Turn Bay Length (ft)						
Base Capacity (vph)	418		1190			387
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.49		0.77			1.27

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 64.6			
Natural Cycle: 120			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.27			
Intersection Signal Delay: 59.5		Intersection LOS: E	
Intersection Capacity Utilization 87.2%		ICU Level of Service E	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 20: NYS Route 32 & South Port Road



Intersection	
Int Delay, s/veh	7.5

Movement	EBL	EBR	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	65	229	325	357	89	131
Future Vol, veh/h	65	229	325	357	89	131
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	Yield
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	91	91	88	88
Heavy Vehicles, %	9	20	10	10	18	17
Mvmt Flow	72	254	357	392	101	149

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1282	176	101	0	-	0
Stage 1	176	-	-	-	-	-
Stage 2	1106	-	-	-	-	-
Critical Hdwy	6.49	6.4	4.2	-	-	-
Critical Hdwy Stg 1	5.49	-	-	-	-	-
Critical Hdwy Stg 2	5.49	-	-	-	-	-
Follow-up Hdwy	3.581	3.48	2.29	-	-	-
Pot Cap-1 Maneuver	176	823	1443	-	-	-
Stage 1	838	-	-	-	-	-
Stage 2	307	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	120	823	1443	-	-	-
Mov Cap-2 Maneuver	120	-	-	-	-	-
Stage 1	573	-	-	-	-	-
Stage 2	307	-	-	-	-	-

Approach	EB	NE	SW
HCM Control Delay, s	21.1	4	0
HCM LOS	C		

Minor Lane/Major Mvmt	NEL	NET	EBLn1	SWT	SWR
Capacity (veh/h)	1443	-	543	-	-
HCM Lane V/C Ratio	0.248	-	0.602	-	-
HCM Control Delay (s)	8.3	0	21.1	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	1	-	4	-	-

Intersection	
Int Delay, s/veh	13.3

Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	26	548	205	62	170	28
Future Vol, veh/h	26	548	205	62	170	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	81	81	83	83
Heavy Vehicles, %	3	0	22	10	12	11
Mvmt Flow	31	652	253	77	205	34

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	330	0	-	0	1006	292
Stage 1	-	-	-	-	292	-
Stage 2	-	-	-	-	714	-
Critical Hdwy	4.13	-	-	-	6.52	6.31
Critical Hdwy Stg 1	-	-	-	-	5.52	-
Critical Hdwy Stg 2	-	-	-	-	5.52	-
Follow-up Hdwy	2.227	-	-	-	3.608	3.399
Pot Cap-1 Maneuver	1224	-	-	-	256	726
Stage 1	-	-	-	-	736	-
Stage 2	-	-	-	-	467	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1224	-	-	-	246	726
Mov Cap-2 Maneuver	-	-	-	-	246	-
Stage 1	-	-	-	-	707	-
Stage 2	-	-	-	-	467	-

Approach	NB	SB	NE
HCM Control Delay, s	0.4	0	68.7
HCM LOS			F

Minor Lane/Major Mvmt	NELn1	NBL	NBT	SBT	SBR
Capacity (veh/h)	271	1224	-	-	-
HCM Lane V/C Ratio	0.88	0.025	-	-	-
HCM Control Delay (s)	68.7	8	0	-	-
HCM Lane LOS	F	A	A	-	-
HCM 95th %tile Q(veh)	7.6	0.1	-	-	-

Intersection	
Int Delay, s/veh	15.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	149	59	63	654	224	79
Future Vol, veh/h	149	59	63	654	224	79
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	125	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	86	86	90	90
Heavy Vehicles, %	13	28	20	9	23	28
Mvmt Flow	171	68	73	760	249	88

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1199	293	337	0	-	0
Stage 1	293	-	-	-	-	-
Stage 2	906	-	-	-	-	-
Critical Hdwy	6.53	6.48	4.3	-	-	-
Critical Hdwy Stg 1	5.53	-	-	-	-	-
Critical Hdwy Stg 2	5.53	-	-	-	-	-
Follow-up Hdwy	3.617	3.552	2.38	-	-	-
Pot Cap-1 Maneuver	195	689	1128	-	-	-
Stage 1	733	-	-	-	-	-
Stage 2	377	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	173	689	1128	-	-	-
Mov Cap-2 Maneuver	173	-	-	-	-	-
Stage 1	651	-	-	-	-	-
Stage 2	377	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	89	0.7	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1128	-	173	689	-	-
HCM Lane V/C Ratio	0.065	-	0.99	0.098	-	-
HCM Control Delay (s)	8.4	0	119.9	10.8	-	-
HCM Lane LOS	A	A	F	B	-	-
HCM 95th %tile Q(veh)	0.2	-	7.9	0.3	-	-

Intersection	
Int Delay, s/veh	7.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	155	7	51	66	43	67
Future Vol, veh/h	155	7	51	66	43	67
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	0	50	-	-	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	65	65	84	84	62	62
Heavy Vehicles, %	25	17	42	42	0	25
Mvmt Flow	238	11	61	79	69	108

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	347	101	0	0	140	0
Stage 1	101	-	-	-	-	-
Stage 2	246	-	-	-	-	-
Critical Hdwy	6.65	6.37	-	-	4.1	-
Critical Hdwy Stg 1	5.65	-	-	-	-	-
Critical Hdwy Stg 2	5.65	-	-	-	-	-
Follow-up Hdwy	3.725	3.453	-	-	2.2	-
Pot Cap-1 Maneuver	606	915	-	-	1456	-
Stage 1	869	-	-	-	-	-
Stage 2	744	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	578	915	-	-	1456	-
Mov Cap-2 Maneuver	578	-	-	-	-	-
Stage 1	869	-	-	-	-	-
Stage 2	709	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.2	0	3
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	578	915	1456	-
HCM Lane V/C Ratio	-	-	0.413	0.012	0.048	-
HCM Control Delay (s)	-	-	15.5	9	7.6	-
HCM Lane LOS	-	-	C	A	A	-
HCM 95th %tile Q(veh)	-	-	2	0	0.1	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	11	14	3	503	194	5
Future Vol, veh/h	11	14	3	503	194	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	42	81	75	72	93	25
Heavy Vehicles, %	0	8	0	8	20	0
Mvmt Flow	26	17	4	699	209	20

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	926	219	229	0	-	0
Stage 1	219	-	-	-	-	-
Stage 2	707	-	-	-	-	-
Critical Hdwy	6.4	6.28	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.372	2.2	-	-	-
Pot Cap-1 Maneuver	301	806	1351	-	-	-
Stage 1	822	-	-	-	-	-
Stage 2	493	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	299	806	1351	-	-	-
Mov Cap-2 Maneuver	299	-	-	-	-	-
Stage 1	818	-	-	-	-	-
Stage 2	493	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.1	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1351	-	399	-	-
HCM Lane V/C Ratio	0.003	-	0.109	-	-
HCM Control Delay (s)	7.7	0	15.1	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.4	-	-

Intersection	
Int Delay, s/veh	1.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	21	14	479	35	23	210
Future Vol, veh/h	21	14	479	35	23	210
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	92	92	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	26	18	521	38	27	247

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	841	540	0	0	559	0
Stage 1	540	-	-	-	-	-
Stage 2	301	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	335	542	-	-	1012	-
Stage 1	584	-	-	-	-	-
Stage 2	751	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	325	542	-	-	1012	-
Mov Cap-2 Maneuver	325	-	-	-	-	-
Stage 1	584	-	-	-	-	-
Stage 2	728	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.5	0	0.9
HCM LOS	C		

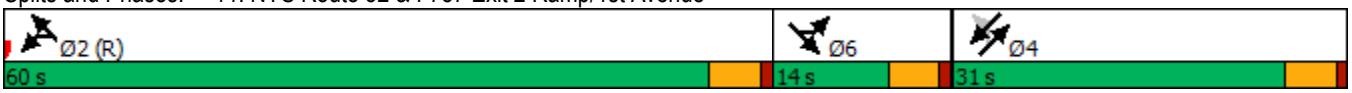
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	387	1012	-
HCM Lane V/C Ratio	-	-	0.113	0.027	-
HCM Control Delay (s)	-	-	15.5	8.7	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0.1	-

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	2	0	47	940	101	60	6	90	0	0	216	9
Future Volume (vph)	2	0	47	940	101	60	6	90	0	0	216	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.87										
Frt		0.871			0.944						0.994	
Flt Protected		0.998		0.950				0.997				
Satd. Flow (prot)	0	1358	0	1719	1754	0	0	1688	0	0	1715	0
Flt Permitted		0.998		0.950				0.976				
Satd. Flow (perm)	0	1353	0	1719	1754	0	0	1653	0	0	1715	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		73			43						2	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		181			194			438			445	
Travel Time (s)		4.9			5.3			11.9			12.1	
Confl. Peds. (#/hr)	19		19									
Peak Hour Factor	0.73	0.73	0.73	0.90	0.90	0.90	0.83	0.83	0.83	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	7%	5%	0%	6%	0%	13%	0%	0%	10%	13%
Adj. Flow (vph)	3	0	64	1044	112	67	7	108	0	0	235	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	67	0	1044	179	0	0	115	0	0	245	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Split	NA		Split	NA		Perm	NA			NA	
Protected Phases	6	6		2	2			4			4	
Permitted Phases							4					
Detector Phase	6	6		2	2		4	4			4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0			5.0	
Minimum Split (s)	14.0	14.0		24.0	24.0		24.0	24.0			24.0	
Total Split (s)	14.0	14.0		60.0	60.0		31.0	31.0			31.0	
Total Split (%)	13.3%	13.3%		57.1%	57.1%		29.5%	29.5%			29.5%	
Maximum Green (s)	9.0	9.0		55.0	55.0		26.0	26.0			26.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0			1.0	
Lost Time Adjust (s)		0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)		5.0		5.0	5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Recall Mode	None	None		C-Max	C-Max		None	None			None	
Act Effct Green (s)		6.5		65.6	65.6			20.0			20.0	

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Actuated g/C Ratio		0.06		0.62	0.62			0.19			0.19	
v/c Ratio		0.44		0.97	0.16			0.37			0.75	
Control Delay		19.1		44.0	8.3			38.9			53.5	
Queue Delay		0.0		0.0	0.0			0.0			0.0	
Total Delay		19.1		44.0	8.3			38.9			53.5	
LOS		B		D	A			D			D	
Approach Delay		19.1			38.8			38.9			53.5	
Approach LOS		B			D			D			D	
Queue Length 50th (ft)		0		639	35			68			155	
Queue Length 95th (ft)		22		#1080	83			103			226	
Internal Link Dist (ft)		101			114			358			365	
Turn Bay Length (ft)												
Base Capacity (vph)		183		1073	1112			409			426	
Starvation Cap Reductn		0		0	0			0			0	
Spillback Cap Reductn		0		0	0			0			0	
Storage Cap Reductn		0		0	0			0			0	
Reduced v/c Ratio		0.37		0.97	0.16			0.28			0.58	

Intersection Summary			
Area Type:	Other		
Cycle Length: 105			
Actuated Cycle Length: 105			
Offset: 0 (0%), Referenced to phase 2:NWTL, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.97			
Intersection Signal Delay: 40.2		Intersection LOS: D	
Intersection Capacity Utilization 79.0%		ICU Level of Service D	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 11: NYS Route 32 & I-787 Exit 2 Ramp/1st Avenue



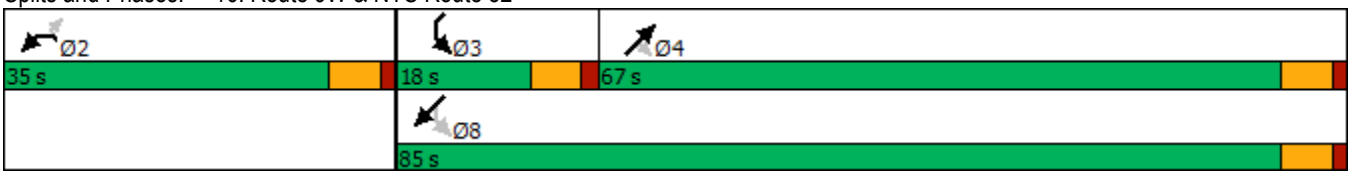
Lane Group	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Volume (vph)	306	157	1081	99	116	1439
Future Volume (vph)	306	157	1081	99	116	1439
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	75		200	100	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1719	1455	3471	1509	1583	3539
Flt Permitted	0.950				0.088	
Satd. Flow (perm)	1719	1455	3471	1509	147	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		81		96		
Link Speed (mph)	45		45			45
Link Distance (ft)	1257		583			1004
Travel Time (s)	19.0		8.8			15.2
Peak Hour Factor	0.91	0.91	0.91	0.91	0.94	0.94
Heavy Vehicles (%)	5%	11%	4%	7%	14%	2%
Adj. Flow (vph)	336	173	1188	109	123	1531
Shared Lane Traffic (%)						
Lane Group Flow (vph)	336	173	1188	109	123	1531
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Turn Type	Prot	Perm	NA	Perm	pm+pt	NA
Protected Phases	2		4		3	8
Permitted Phases		2		4	8	8
Detector Phase	2	2	4	4	3	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	17.0	17.0	24.0	24.0	11.0	11.0
Total Split (s)	35.0	35.0	67.0	67.0	18.0	85.0
Total Split (%)	29.2%	29.2%	55.8%	55.8%	15.0%	70.8%
Maximum Green (s)	29.0	29.0	61.0	61.0	12.0	79.0
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	Max	None	None	None	None

Lane Group	NWL	NWR	NET	NER	SWL	SWT
Act Effct Green (s)	29.4	29.4	41.6	41.6	56.6	56.6
Actuated g/C Ratio	0.30	0.30	0.42	0.42	0.58	0.58
v/c Ratio	0.65	0.35	0.81	0.16	0.57	0.75
Control Delay	39.6	18.9	29.3	4.9	24.4	17.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.6	18.9	29.3	4.9	24.4	17.8
LOS	D	B	C	A	C	B
Approach Delay	32.6		27.3			18.2
Approach LOS	C		C			B
Queue Length 50th (ft)	179	42	329	5	32	345
Queue Length 95th (ft)	#369	122	425	34	85	419
Internal Link Dist (ft)	1177		503			924
Turn Bay Length (ft)		75		200	100	
Base Capacity (vph)	514	492	2186	986	262	2887
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.35	0.54	0.11	0.47	0.53

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 98.1			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 23.7		Intersection LOS: C	
Intersection Capacity Utilization 68.3%		ICU Level of Service C	
Analysis Period (min) 15			

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 16: Route 9W & NYS Route 32





Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	128	168	253	41	82	930
Future Volume (vph)	128	168	253	41	82	930
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.923		0.981			
Flt Protected	0.979					0.996
Satd. Flow (prot)	1581	0	1637	0	0	1755
Flt Permitted	0.979					0.934
Satd. Flow (perm)	1581	0	1637	0	0	1646
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	94		19			
Link Speed (mph)	30		30			30
Link Distance (ft)	421		375			362
Travel Time (s)	9.6		8.5			8.2
Peak Hour Factor	0.85	0.85	0.72	0.72	0.94	0.94
Heavy Vehicles (%)	8%	9%	8%	50%	40%	5%
Adj. Flow (vph)	151	198	351	57	87	989
Shared Lane Traffic (%)						
Lane Group Flow (vph)	349	0	408	0	0	1076
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Turn Type	Perm		NA		Perm	NA
Protected Phases			2			2
Permitted Phases	8				2	
Detector Phase	8		2		2	2
Switch Phase						
Minimum Initial (s)	5.0		5.0		5.0	5.0
Minimum Split (s)	23.0		23.0		23.0	23.0
Total Split (s)	25.0		45.0		45.0	45.0
Total Split (%)	35.7%		64.3%		64.3%	64.3%
Maximum Green (s)	20.0		40.0		40.0	40.0
Yellow Time (s)	3.5		3.5		3.5	3.5
All-Red Time (s)	1.5		1.5		1.5	1.5
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	5.0		5.0			5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		Max		Max	Max
Walk Time (s)	7.0		7.0		7.0	7.0
Flash Dont Walk (s)	11.0		11.0		11.0	11.0
Pedestrian Calls (#/hr)	0		0		0	0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Act Effct Green (s)	15.4		40.5			40.5
Actuated g/C Ratio	0.23		0.61			0.61
v/c Ratio	0.79		0.40			1.07
Control Delay	30.7		8.5			65.2
Queue Delay	0.0		0.0			0.0
Total Delay	30.7		8.5			65.2
LOS	C		A			E
Approach Delay	30.7		8.5			65.2
Approach LOS	C		A			E
Queue Length 50th (ft)	95		72			~503
Queue Length 95th (ft)	166		103			#777
Internal Link Dist (ft)	341		295			282
Turn Bay Length (ft)						
Base Capacity (vph)	546		1012			1010
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.64		0.40			1.07

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 65.9
Natural Cycle: 90
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.07
Intersection Signal Delay: 46.0 Intersection LOS: D
Intersection Capacity Utilization 99.2% ICU Level of Service F
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 20: NYS Route 32 & South Port Road



Intersection	
Int Delay, s/veh	6.2

Movement	EBL	EBR	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	69	283	204	142	250	91
Future Vol, veh/h	69	283	204	142	250	91
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	Yield
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	74	74	85	85
Heavy Vehicles, %	12	3	9	8	4	8
Mvmt Flow	84	345	276	192	294	107

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1092	348	294	0	-	0
Stage 1	348	-	-	-	-	-
Stage 2	744	-	-	-	-	-
Critical Hdwy	6.52	6.23	4.19	-	-	-
Critical Hdwy Stg 1	5.52	-	-	-	-	-
Critical Hdwy Stg 2	5.52	-	-	-	-	-
Follow-up Hdwy	3.608	3.327	2.281	-	-	-
Pot Cap-1 Maneuver	227	693	1229	-	-	-
Stage 1	693	-	-	-	-	-
Stage 2	452	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	170	693	1229	-	-	-
Mov Cap-2 Maneuver	170	-	-	-	-	-
Stage 1	519	-	-	-	-	-
Stage 2	452	-	-	-	-	-

Approach	EB	NE	SW
HCM Control Delay, s	13.2	5.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NEL	NET	EBLn1	SWT	SWR
Capacity (veh/h)	1229	-	862	-	-
HCM Lane V/C Ratio	0.224	-	0.498	-	-
HCM Control Delay (s)	8.8	0	13.2	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.9	-	2.8	-	-

Intersection	
Int Delay, s/veh	2.8

Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	36	216	412	285	59	40
Future Vol, veh/h	36	216	412	285	59	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	77	77	84	84	81	81
Heavy Vehicles, %	4	0	0	5	5	1
Mvmt Flow	47	281	490	339	73	49

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	829	0	-	0	1035	660
Stage 1	-	-	-	-	660	-
Stage 2	-	-	-	-	375	-
Critical Hdwy	4.14	-	-	-	6.45	6.21
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	2.236	-	-	-	3.545	3.309
Pot Cap-1 Maneuver	794	-	-	-	254	465
Stage 1	-	-	-	-	508	-
Stage 2	-	-	-	-	688	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	794	-	-	-	236	465
Mov Cap-2 Maneuver	-	-	-	-	236	-
Stage 1	-	-	-	-	472	-
Stage 2	-	-	-	-	688	-

Approach	NB	SB	NE
HCM Control Delay, s	1.4	0	25.6
HCM LOS			D

Minor Lane/Major Mvmt	NELn1	NBL	NBT	SBT	SBR
Capacity (veh/h)	295	794	-	-	-
HCM Lane V/C Ratio	0.414	0.059	-	-	-
HCM Control Delay (s)	25.6	9.8	0	-	-
HCM Lane LOS	D	A	A	-	-
HCM 95th %tile Q(veh)	1.9	0.2	-	-	-

Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	58	75	59	235	673	386
Future Vol, veh/h	58	75	59	235	673	386
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	125	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	88	88	91	91
Heavy Vehicles, %	29	14	10	7	7	2
Mvmt Flow	63	82	67	267	740	424

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1353	952	1164	0	-	0
Stage 1	952	-	-	-	-	-
Stage 2	401	-	-	-	-	-
Critical Hdwy	6.69	6.34	4.2	-	-	-
Critical Hdwy Stg 1	5.69	-	-	-	-	-
Critical Hdwy Stg 2	5.69	-	-	-	-	-
Follow-up Hdwy	3.761	3.426	2.29	-	-	-
Pot Cap-1 Maneuver	145	299	572	-	-	-
Stage 1	336	-	-	-	-	-
Stage 2	622	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	125	299	572	-	-	-
Mov Cap-2 Maneuver	125	-	-	-	-	-
Stage 1	290	-	-	-	-	-
Stage 2	622	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	38.3	2.4	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	572	-	125	299	-	-
HCM Lane V/C Ratio	0.117	-	0.504	0.273	-	-
HCM Control Delay (s)	12.1	0	60	21.5	-	-
HCM Lane LOS	B	A	F	C	-	-
HCM 95th %tile Q(veh)	0.4	-	2.3	1.1	-	-

Intersection	
Int Delay, s/veh	3.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	86	32	105	149	16	70
Future Vol, veh/h	86	32	105	149	16	70
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	0	50	-	-	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	83	83	84	84	78	78
Heavy Vehicles, %	26	10	25	13	0	37
Mvmt Flow	104	39	125	177	21	90

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	346	214	0	0	302	0
Stage 1	214	-	-	-	-	-
Stage 2	132	-	-	-	-	-
Critical Hdwy	6.66	6.3	-	-	4.1	-
Critical Hdwy Stg 1	5.66	-	-	-	-	-
Critical Hdwy Stg 2	5.66	-	-	-	-	-
Follow-up Hdwy	3.734	3.39	-	-	2.2	-
Pot Cap-1 Maneuver	605	806	-	-	1270	-
Stage 1	768	-	-	-	-	-
Stage 2	838	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	595	806	-	-	1270	-
Mov Cap-2 Maneuver	595	-	-	-	-	-
Stage 1	768	-	-	-	-	-
Stage 2	824	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.6	0	1.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	595	806	1270	-
HCM Lane V/C Ratio	-	-	0.174	0.048	0.016	-
HCM Control Delay (s)	-	-	12.3	9.7	7.9	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.6	0.1	0	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	2	6	209	443	13
Future Vol, veh/h	7	2	6	209	443	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	50	50	30	80	88	63
Heavy Vehicles, %	0	0	0	7	4	0
Mvmt Flow	14	4	20	261	503	21

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	815	514	524	0	-	0
Stage 1	514	-	-	-	-	-
Stage 2	301	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	350	564	1053	-	-	-
Stage 1	605	-	-	-	-	-
Stage 2	755	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	342	564	1053	-	-	-
Mov Cap-2 Maneuver	342	-	-	-	-	-
Stage 1	592	-	-	-	-	-
Stage 2	755	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.1	0.6	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1053	-	375	-	-
HCM Lane V/C Ratio	0.019	-	0.048	-	-
HCM Control Delay (s)	8.5	0	15.1	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Intersection	
Int Delay, s/veh	1.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	43	28	195	21	14	437
Future Vol, veh/h	43	28	195	21	14	437
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	85	85	92	92
Heavy Vehicles, %	0	0	2	2	2	2
Mvmt Flow	54	35	229	25	15	475

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	747	242	0	0	254	0
Stage 1	242	-	-	-	-	-
Stage 2	505	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.12	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.218	-
Pot Cap-1 Maneuver	383	802	-	-	1311	-
Stage 1	803	-	-	-	-	-
Stage 2	610	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	377	802	-	-	1311	-
Mov Cap-2 Maneuver	377	-	-	-	-	-
Stage 1	803	-	-	-	-	-
Stage 2	600	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.3	0	0.2
HCM LOS	B		

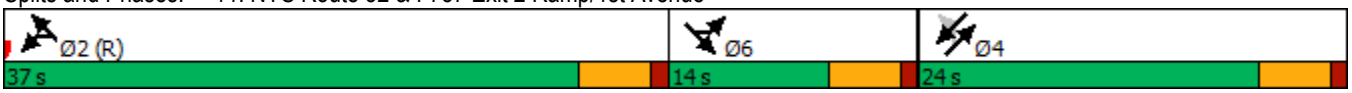
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	477	1311	-
HCM Lane V/C Ratio	-	-	0.186	0.012	-
HCM Control Delay (s)	-	-	14.3	7.8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.7	0	-

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	3	0	30	500	53	90	8	75	0	0	122	4
Future Volume (vph)	3	0	30	500	53	90	8	75	0	0	122	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.91										
Frt		0.878			0.906						0.996	
Flt Protected		0.995		0.950				0.995				
Satd. Flow (prot)	0	1424	0	1444	1426	0	0	1645	0	0	1601	0
Flt Permitted		0.995		0.950				0.962				
Satd. Flow (perm)	0	1415	0	1444	1426	0	0	1591	0	0	1601	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		102			101						2	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		181			194			438			445	
Travel Time (s)		4.9			5.3			11.9			12.1	
Confl. Peds. (#/hr)	19		19									
Peak Hour Factor	0.82	0.82	0.82	0.89	0.89	0.89	0.91	0.91	0.91	0.78	0.78	0.78
Heavy Vehicles (%)	0%	0%	7%	25%	0%	33%	14%	15%	0%	0%	18%	25%
Adj. Flow (vph)	4	0	37	562	60	101	9	82	0	0	156	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	41	0	562	161	0	0	91	0	0	161	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Split	NA		Split	NA		Perm	NA			NA	
Protected Phases	6	6		2	2			4			4	
Permitted Phases							4					
Detector Phase	6	6		2	2		4	4			4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0			5.0	
Minimum Split (s)	14.0	14.0		24.0	24.0		24.0	24.0			24.0	
Total Split (s)	14.0	14.0		37.0	37.0		24.0	24.0			24.0	
Total Split (%)	18.7%	18.7%		49.3%	49.3%		32.0%	32.0%			32.0%	
Maximum Green (s)	9.0	9.0		32.0	32.0		19.0	19.0			19.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0			1.0	
Lost Time Adjust (s)		0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)		5.0		5.0	5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Recall Mode	None	None		C-Max	C-Max		None	None			None	
Act Effct Green (s)		5.5		45.9	45.9			12.8			12.8	

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Actuated g/C Ratio		0.07		0.61	0.61			0.17			0.17	
v/c Ratio		0.21		0.64	0.18			0.33			0.59	
Control Delay		2.4		17.0	4.7			29.2			36.1	
Queue Delay		0.0		0.0	0.0			0.0			0.0	
Total Delay		2.4		17.0	4.7			29.2			36.1	
LOS		A		B	A			C			D	
Approach Delay		2.4			14.3			29.2			36.1	
Approach LOS		A			B			C			D	
Queue Length 50th (ft)		0		174	12			38			69	
Queue Length 95th (ft)		0		#389	45			71			98	
Internal Link Dist (ft)		101			114			358			365	
Turn Bay Length (ft)												
Base Capacity (vph)		260		883	911			403			407	
Starvation Cap Reductn		0		0	0			0			0	
Spillback Cap Reductn		0		0	0			0			0	
Storage Cap Reductn		0		0	0			0			0	
Reduced v/c Ratio		0.16		0.64	0.18			0.23			0.40	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 75			
Offset: 0 (0%), Referenced to phase 2:NWTL, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay: 18.6		Intersection LOS: B	
Intersection Capacity Utilization 53.3%		ICU Level of Service A	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 11: NYS Route 32 & I-787 Exit 2 Ramp/1st Avenue



Lane Group	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Volume (vph)	100	181	2035	176	148	821
Future Volume (vph)	100	181	2035	176	148	821
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	75		200	100	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1530	1442	3505	1482	1388	3406
Flt Permitted	0.950				0.054	
Satd. Flow (perm)	1530	1442	3505	1482	79	3406
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		208		113		
Link Speed (mph)	45		45			45
Link Distance (ft)	1257		583			1004
Travel Time (s)	19.0		8.8			15.2
Peak Hour Factor	0.87	0.87	0.93	0.93	0.85	0.85
Heavy Vehicles (%)	18%	12%	3%	9%	30%	6%
Adj. Flow (vph)	115	208	2188	189	174	966
Shared Lane Traffic (%)						
Lane Group Flow (vph)	115	208	2188	189	174	966
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Turn Type	Prot	Perm	NA	Perm	pm+pt	NA
Protected Phases	2		4		3	8
Permitted Phases		2		4	8	8
Detector Phase	2	2	4	4	3	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	17.0	17.0	24.0	24.0	11.0	11.0
Total Split (s)	18.0	18.0	74.0	74.0	23.0	97.0
Total Split (%)	15.7%	15.7%	64.3%	64.3%	20.0%	84.3%
Maximum Green (s)	12.0	12.0	68.0	68.0	17.0	91.0
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	Max	None	None	None	None

Lane Group	NWL	NWR	NET	NER	SWL	SWT
Act Effct Green (s)	12.0	12.0	68.1	68.1	87.6	87.6
Actuated g/C Ratio	0.11	0.11	0.61	0.61	0.78	0.78
v/c Ratio	0.70	0.61	1.02	0.20	0.79	0.36
Control Delay	72.0	14.9	48.8	4.9	52.2	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.0	14.9	48.8	4.9	52.2	4.0
LOS	E	B	D	A	D	A
Approach Delay	35.2		45.3			11.4
Approach LOS	D		D			B
Queue Length 50th (ft)	82	0	~906	22	81	88
Queue Length 95th (ft)	#164	65	#1072	55	146	102
Internal Link Dist (ft)	1177		503			924
Turn Bay Length (ft)		75		200	100	
Base Capacity (vph)	164	340	2137	947	261	2779
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.61	1.02	0.20	0.67	0.35

Intersection Summary

Area Type: Other
Cycle Length: 115
Actuated Cycle Length: 111.6
Natural Cycle: 90
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.02
Intersection Signal Delay: 34.4 Intersection LOS: C
Intersection Capacity Utilization 85.0% ICU Level of Service E
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 16: Route 9W & NYS Route 32





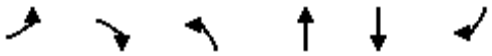
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	45	107	717	85	165	258
Future Volume (vph)	45	107	717	85	165	258
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	200		0	0	
Storage Lanes	1	1		0	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850	0.986			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1128	967	1746	0	1421	1570
Flt Permitted	0.950				0.143	
Satd. Flow (perm)	1128	967	1746	0	214	1570
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		143	14			
Link Speed (mph)	30		30			30
Link Distance (ft)	421		375			1046
Travel Time (s)	9.6		8.5			23.8
Peak Hour Factor	0.75	0.75	0.87	0.87	0.90	0.84
Heavy Vehicles (%)	60%	67%	6%	18%	27%	21%
Adj. Flow (vph)	60	143	824	98	183	307
Shared Lane Traffic (%)						
Lane Group Flow (vph)	60	143	922	0	183	307
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Turn Type	Perm	Over	NA		pm+pt	NA
Protected Phases		1	2		1	6
Permitted Phases	8				6	6
Detector Phase	8	1	2		1	6
Switch Phase						
Minimum Initial (s)	5.0	3.5	5.0		3.5	5.0
Minimum Split (s)	10.0	8.0	25.0		8.0	25.0
Total Split (s)	12.0	13.0	45.0		13.0	58.0
Total Split (%)	17.1%	18.6%	64.3%		18.6%	82.9%
Maximum Green (s)	7.5	8.5	40.0		8.5	53.0
Yellow Time (s)	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	1.0	1.0	1.5		1.0	1.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.5	4.5	5.0		4.5	5.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	C-Max		None	C-Max

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Act Effct Green (s)	7.1	7.7	45.6		58.3	59.8
Actuated g/C Ratio	0.10	0.11	0.65		0.83	0.85
v/c Ratio	0.53	0.61	0.81		0.59	0.23
Control Delay	47.7	18.4	19.2		13.5	2.5
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	47.7	18.4	19.2		13.5	2.5
LOS	D	B	B		B	A
Approach Delay	27.1		19.2			6.6
Approach LOS	C		B			A
Queue Length 50th (ft)	25	0	320		15	29
Queue Length 95th (ft)	49	29	#562		67	46
Internal Link Dist (ft)	341		295			966
Turn Bay Length (ft)		200				
Base Capacity (vph)	120	243	1142		324	1341
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.50	0.59	0.81		0.56	0.23

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 13 (19%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 16.4		Intersection LOS: B	
Intersection Capacity Utilization 67.9%		ICU Level of Service C	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 20: NYS Route 32 & South Port Road





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	149	59	63	654	224	79
Future Volume (vph)	149	59	63	654	224	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125	0	0			0
Storage Lanes	1	1	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.965	
Flt Protected	0.950			0.996		
Satd. Flow (prot)	1597	1262	0	1721	1475	0
Flt Permitted	0.950			0.943		
Satd. Flow (perm)	1597	1262	0	1629	1475	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		68			47	
Link Speed (mph)	45			55	55	
Link Distance (ft)	2072			957	365	
Travel Time (s)	31.4			11.9	4.5	
Peak Hour Factor	0.87	0.87	0.86	0.86	0.90	0.90
Heavy Vehicles (%)	13%	28%	20%	9%	23%	28%
Adj. Flow (vph)	171	68	73	760	249	88
Shared Lane Traffic (%)						
Lane Group Flow (vph)	171	68	0	833	337	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Turn Type	Prot	Perm	Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4	2			
Detector Phase	4	4	2	2	6	
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	
Total Split (s)	22.5	22.5	42.5	42.5	42.5	
Total Split (%)	34.6%	34.6%	65.4%	65.4%	65.4%	
Maximum Green (s)	18.0	18.0	38.0	38.0	38.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	C-Min	C-Min	C-Min	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	
Act Effct Green (s)	12.2	12.2		43.8	43.8	
Actuated g/C Ratio	0.19	0.19		0.67	0.67	
v/c Ratio	0.57	0.23		0.76	0.33	
Control Delay	31.1	8.0		14.8	5.5	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	31.1	8.0		14.8	5.5	
LOS	C	A		B	A	
Approach Delay	24.5			14.8	5.5	
Approach LOS	C			B	A	
Queue Length 50th (ft)	62	0		180	38	
Queue Length 95th (ft)	103	25		#451	94	
Internal Link Dist (ft)	1992			877	285	
Turn Bay Length (ft)	125					
Base Capacity (vph)	442	398		1098	1010	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.39	0.17		0.76	0.33	

Intersection Summary			
Area Type:	Other		
Cycle Length: 65			
Actuated Cycle Length: 65			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 14.2		Intersection LOS: B	
Intersection Capacity Utilization 74.0%		ICU Level of Service D	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 21: NYS Route 144 & NYS Route 32

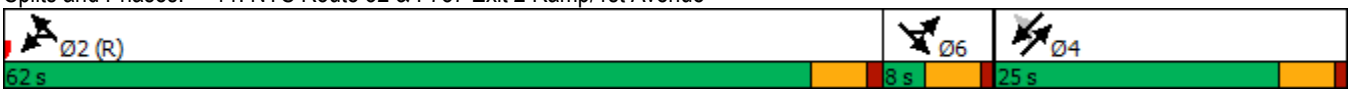


Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	2	0	47	940	101	60	6	90	0	0	216	9
Future Volume (vph)	2	0	47	940	101	60	6	90	0	0	216	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.69										
Frt		0.871			0.944						0.994	
Flt Protected		0.998		0.950				0.997				
Satd. Flow (prot)	0	1083	0	1719	1754	0	0	1688	0	0	1715	0
Flt Permitted		0.998		0.950				0.975				
Satd. Flow (perm)	0	1071	0	1719	1754	0	0	1651	0	0	1715	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		80			57						2	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		181			194			438			445	
Travel Time (s)		4.9			5.3			11.9			12.1	
Confl. Peds. (#/hr)	19		19									
Peak Hour Factor	0.73	0.73	0.73	0.90	0.90	0.90	0.83	0.83	0.83	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	7%	5%	0%	6%	0%	13%	0%	0%	10%	13%
Adj. Flow (vph)	3	0	64	1044	112	67	7	108	0	0	235	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	67	0	1044	179	0	0	115	0	0	245	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Split	NA		Split	NA		Perm	NA			NA	
Protected Phases	6	6		2	2			4			4	
Permitted Phases							4					
Detector Phase	6	6		2	2		4	4			4	
Switch Phase												
Minimum Initial (s)	3.0	3.0		5.0	5.0		5.0	5.0			5.0	
Minimum Split (s)	8.0	8.0		24.0	24.0		23.0	23.0			23.0	
Total Split (s)	8.0	8.0		62.0	62.0		25.0	25.0			25.0	
Total Split (%)	8.4%	8.4%		65.3%	65.3%		26.3%	26.3%			26.3%	
Maximum Green (s)	3.0	3.0		57.0	57.0		20.0	20.0			20.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0			1.0	
Lost Time Adjust (s)		0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)		5.0		5.0	5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Recall Mode	None	None		C-Max	C-Max		None	None			None	
Act Effct Green (s)		3.0		61.3	61.3			17.3			17.3	

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Actuated g/C Ratio		0.03		0.65	0.65			0.18			0.18	
v/c Ratio		0.60		0.94	0.16			0.38			0.78	
Control Delay		31.8		34.8	5.7			37.2			54.1	
Queue Delay		0.0		0.0	0.0			0.0			0.0	
Total Delay		31.8		34.8	5.7			37.2			54.1	
LOS		C		C	A			D			D	
Approach Delay		31.8			30.6			37.2			54.1	
Approach LOS		C			C			D			D	
Queue Length 50th (ft)		0		566	28			60			139	
Queue Length 95th (ft)		18		#908	58			100			#221	
Internal Link Dist (ft)		101			114			358			365	
Turn Bay Length (ft)												
Base Capacity (vph)		111		1109	1152			347			362	
Starvation Cap Reductn		0		0	0			0			0	
Spillback Cap Reductn		0		0	0			0			0	
Storage Cap Reductn		0		0	0			0			0	
Reduced v/c Ratio		0.60		0.94	0.16			0.33			0.68	

Intersection Summary			
Area Type:	Other		
Cycle Length: 95			
Actuated Cycle Length: 95			
Offset: 0 (0%), Referenced to phase 2:NWTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.94			
Intersection Signal Delay: 34.6		Intersection LOS: C	
Intersection Capacity Utilization 79.0%		ICU Level of Service D	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 11: NYS Route 32 & I-787 Exit 2 Ramp/1st Avenue





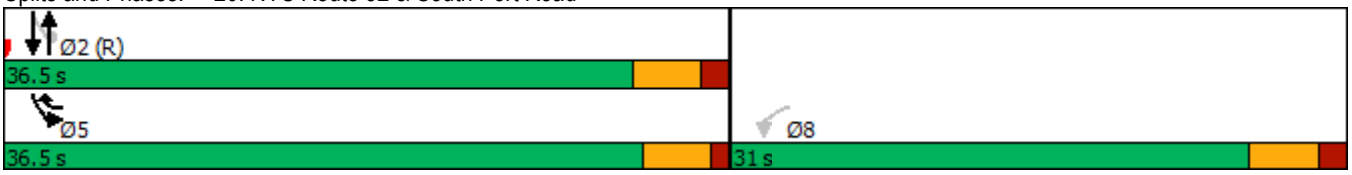
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	128	168	253	41	82	930
Future Volume (vph)	128	168	253	41	82	930
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	200		0	0	
Storage Lanes	1	1		0	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850	0.981			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1671	1482	1637	0	1289	1810
Flt Permitted	0.950				0.000	
Satd. Flow (perm)	1671	1482	1637	0	0	1810
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		198	16			
Link Speed (mph)	30		30			30
Link Distance (ft)	421		375			1049
Travel Time (s)	9.6		8.5			23.8
Peak Hour Factor	0.85	0.85	0.72	0.72	0.94	0.94
Heavy Vehicles (%)	8%	9%	8%	50%	40%	5%
Adj. Flow (vph)	151	198	351	57	87	989
Shared Lane Traffic (%)						
Lane Group Flow (vph)	151	198	408	0	87	989
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Turn Type	Perm	Over	NA		pm+pt	NA
Protected Phases		5!	2!		5!	2
Permitted Phases	8				2	
Detector Phase	8	5	2		5	2
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	23.0	9.5	23.0		9.5	23.0
Total Split (s)	31.0	36.5	36.5		36.5	36.5
Total Split (%)	45.9%	54.1%	54.1%		54.1%	54.1%
Maximum Green (s)	26.0	32.0	31.5		32.0	31.5
Yellow Time (s)	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	1.5	1.0	1.5		1.0	1.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	4.5	5.0		4.5	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	C-Max		None	C-Max

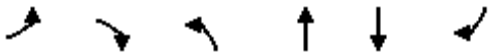


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Walk Time (s)	7.0		7.0			7.0
Flash Dont Walk (s)	11.0		11.0			11.0
Pedestrian Calls (#/hr)	0		0			0
Act Effct Green (s)	11.4	49.8	49.4		49.8	49.4
Actuated g/C Ratio	0.17	0.74	0.73		0.74	0.73
v/c Ratio	0.53	0.17	0.34		0.09	0.75
Control Delay	31.8	1.3	5.7		4.6	13.7
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	31.8	1.3	5.7		4.6	13.7
LOS	C	A	A		A	B
Approach Delay	14.5		5.7			12.9
Approach LOS	B		A			B
Queue Length 50th (ft)	58	0	55		10	233
Queue Length 95th (ft)	94	17	88		28	#596
Internal Link Dist (ft)	341		295			969
Turn Bay Length (ft)		200				
Base Capacity (vph)	643	1146	1203		951	1326
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.23	0.17	0.34		0.09	0.75

Intersection Summary			
Area Type:	Other		
Cycle Length: 67.5			
Actuated Cycle Length: 67.5			
Offset: 0 (0%), Referenced to phase 2:NBSB and 6:, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.75			
Intersection Signal Delay: 11.6		Intersection LOS: B	
Intersection Capacity Utilization 64.4%		ICU Level of Service C	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			
! Phase conflict between lane groups.			

Splits and Phases: 20: NYS Route 32 & South Port Road





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	58	75	59	235	673	386
Future Volume (vph)	58	75	59	235	673	386
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125	0	0			0
Storage Lanes	1	1	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.951	
Flt Protected	0.950			0.990		
Satd. Flow (prot)	1399	1417	0	1748	1718	0
Flt Permitted	0.950			0.573		
Satd. Flow (perm)	1399	1417	0	1012	1718	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		82			76	
Link Speed (mph)	45			55	55	
Link Distance (ft)	2072			957	365	
Travel Time (s)	31.4			11.9	4.5	
Peak Hour Factor	0.92	0.92	0.88	0.88	0.91	0.91
Heavy Vehicles (%)	29%	14%	10%	7%	7%	2%
Adj. Flow (vph)	63	82	67	267	740	424
Shared Lane Traffic (%)						
Lane Group Flow (vph)	63	82	0	334	1164	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Turn Type	Prot	Perm	Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4	2			
Detector Phase	4	4	2	2	6	
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	
Total Split (s)	22.5	22.5	42.5	42.5	42.5	
Total Split (%)	34.6%	34.6%	65.4%	65.4%	65.4%	
Maximum Green (s)	18.0	18.0	38.0	38.0	38.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	C-Min	C-Min	C-Min	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	
Act Effct Green (s)	8.4	8.4		50.5	50.5	
Actuated g/C Ratio	0.13	0.13		0.78	0.78	
v/c Ratio	0.35	0.32		0.43	0.86	
Control Delay	30.3	10.2		5.9	16.9	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	30.3	10.2		5.9	16.9	
LOS	C	B		A	B	
Approach Delay	18.9			5.9	16.9	
Approach LOS	B			A	B	
Queue Length 50th (ft)	23	0		39	256	
Queue Length 95th (ft)	53	32		98	#696	
Internal Link Dist (ft)	1992			877	285	
Turn Bay Length (ft)	125					
Base Capacity (vph)	387	451		785	1351	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.16	0.18		0.43	0.86	

Intersection Summary			
Area Type:	Other		
Cycle Length: 65			
Actuated Cycle Length: 65			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.86			
Intersection Signal Delay: 14.8		Intersection LOS: B	
Intersection Capacity Utilization 75.0%		ICU Level of Service D	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 21: NYS Route 144 & NYS Route 32



Intersection	
Int Delay, s/veh	10.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	200	7	47	109	43	64
Future Vol, veh/h	200	7	47	109	43	64
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	0	50	-	-	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	65	65	84	84	62	62
Heavy Vehicles, %	42	17	36	65	0	22
Mvmt Flow	308	11	56	130	69	103

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	362	121	0	0	186	0
Stage 1	121	-	-	-	-	-
Stage 2	241	-	-	-	-	-
Critical Hdwy	6.82	6.37	-	-	4.1	-
Critical Hdwy Stg 1	5.82	-	-	-	-	-
Critical Hdwy Stg 2	5.82	-	-	-	-	-
Follow-up Hdwy	3.878	3.453	-	-	2.2	-
Pot Cap-1 Maneuver	565	891	-	-	1401	-
Stage 1	814	-	-	-	-	-
Stage 2	714	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	537	891	-	-	1401	-
Mov Cap-2 Maneuver	537	-	-	-	-	-
Stage 1	814	-	-	-	-	-
Stage 2	679	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	19.9	0	3.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	537	891	1401	-
HCM Lane V/C Ratio	-	-	0.573	0.012	0.05	-
HCM Control Delay (s)	-	-	20.3	9.1	7.7	-
HCM Lane LOS	-	-	C	A	A	-
HCM 95th %tile Q(veh)	-	-	3.6	0	0.2	-

Intersection	
Int Delay, s/veh	3.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	111	32	104	169	16	68
Future Vol, veh/h	111	32	104	169	16	68
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	0	50	-	-	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	83	83	84	84	78	78
Heavy Vehicles, %	43	10	24	23	0	35
Mvmt Flow	134	39	124	201	21	87

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	354	225	0	0	325	0
Stage 1	225	-	-	-	-	-
Stage 2	129	-	-	-	-	-
Critical Hdwy	6.83	6.3	-	-	4.1	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.887	3.39	-	-	2.2	-
Pot Cap-1 Maneuver	569	795	-	-	1246	-
Stage 1	725	-	-	-	-	-
Stage 2	805	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	559	795	-	-	1246	-
Mov Cap-2 Maneuver	559	-	-	-	-	-
Stage 1	725	-	-	-	-	-
Stage 2	791	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.7	0	1.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	559	795	1246	-
HCM Lane V/C Ratio	-	-	0.239	0.048	0.016	-
HCM Control Delay (s)	-	-	13.5	9.8	7.9	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.9	0.2	0.1	-



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	102	82	717	148	139	258
Future Volume (vph)	102	82	717	148	139	258
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	200		0	200	
Storage Lanes	1	1		0	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850	0.977			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	992	1029	1628	0	1262	1570
Flt Permitted	0.950				0.083	
Satd. Flow (perm)	992	1029	1628	0	110	1570
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		91	21			
Link Speed (mph)	30		30			30
Link Distance (ft)	421		375			1046
Travel Time (s)	9.6		8.5			23.8
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	82%	57%	6%	53%	43%	21%
Adj. Flow (vph)	113	91	797	164	154	287
Shared Lane Traffic (%)						
Lane Group Flow (vph)	113	91	961	0	154	287
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Turn Type	Perm	pm+ov	NA		pm+pt	NA
Protected Phases		1	2		1	6
Permitted Phases	8	8			6	6
Detector Phase	8	1	2		1	6
Switch Phase						
Minimum Initial (s)	5.0	3.5	5.0		3.5	5.0
Minimum Split (s)	10.0	8.0	25.0		8.0	25.0
Total Split (s)	20.0	10.0	50.0		10.0	60.0
Total Split (%)	25.0%	12.5%	62.5%		12.5%	75.0%
Maximum Green (s)	15.5	5.5	45.0		5.5	55.0
Yellow Time (s)	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	1.0	1.0	1.5		1.0	1.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.5	4.5	5.0		4.5	5.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	C-Max		None	C-Max



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Act Effct Green (s)	12.9	22.9	47.6		60.5	61.0
Actuated g/C Ratio	0.16	0.29	0.60		0.76	0.76
v/c Ratio	0.71	0.25	0.98		0.78	0.24
Control Delay	55.3	6.8	44.8		46.4	4.7
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	55.3	6.8	44.8		46.4	4.7
LOS	E	A	D		D	A
Approach Delay	33.7		44.8			19.2
Approach LOS	C		D			B
Queue Length 50th (ft)	53	0	~522		39	44
Queue Length 95th (ft)	#117	31	#752		#159	78
Internal Link Dist (ft)	341		295			966
Turn Bay Length (ft)		200			200	
Base Capacity (vph)	192	359	976		197	1196
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.59	0.25	0.98		0.78	0.24

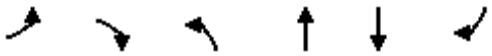
Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 10 (13%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.98
Intersection Signal Delay: 36.4 Intersection LOS: D
Intersection Capacity Utilization 71.7% ICU Level of Service C
Analysis Period (min) 15

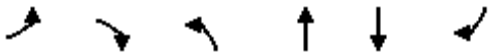
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: NYS Route 32 & South Port Road





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	137	59	63	729	296	64
Future Volume (vph)	137	59	63	729	296	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125	0	0			0
Storage Lanes	1	1	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.976	
Flt Protected	0.950			0.996		
Satd. Flow (prot)	1719	1262	0	1602	1350	0
Flt Permitted	0.950			0.942		
Satd. Flow (perm)	1719	1262	0	1515	1350	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		68			29	
Link Speed (mph)	45			55	55	
Link Distance (ft)	2072			957	365	
Travel Time (s)	31.4			11.9	4.5	
Peak Hour Factor	0.87	0.87	0.86	0.86	0.90	0.90
Heavy Vehicles (%)	5%	28%	20%	18%	43%	11%
Adj. Flow (vph)	157	68	73	848	329	71
Shared Lane Traffic (%)						
Lane Group Flow (vph)	157	68	0	921	400	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Turn Type	Prot	Perm	Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4	2			
Detector Phase	4	4	2	2	6	
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	
Total Split (s)	22.5	22.5	42.5	42.5	42.5	
Total Split (%)	34.6%	34.6%	65.4%	65.4%	65.4%	
Maximum Green (s)	18.0	18.0	38.0	38.0	38.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	C-Min	C-Min	C-Min	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	
Act Effct Green (s)	11.2	11.2		48.0	48.0	
Actuated g/C Ratio	0.17	0.17		0.74	0.74	
v/c Ratio	0.53	0.25		0.82	0.40	
Control Delay	30.5	8.7		18.4	6.0	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	30.5	8.7		18.4	6.0	
LOS	C	A		B	A	
Approach Delay	23.9			18.4	6.0	
Approach LOS	C			B	A	
Queue Length 50th (ft)	57	0		233	50	
Queue Length 95th (ft)	97	26		#543	122	
Internal Link Dist (ft)	1992			877	285	
Turn Bay Length (ft)	125					
Base Capacity (vph)	476	398		1118	1004	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.33	0.17		0.82	0.40	

Intersection Summary			
Area Type:	Other		
Cycle Length: 65			
Actuated Cycle Length: 65			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 16.0		Intersection LOS: B	
Intersection Capacity Utilization 80.2%		ICU Level of Service D	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 2: NYS Route 144 & NYS Route 32



Intersection	
Int Delay, s/veh	25

Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	26	623	277	62	170	28
Future Vol, veh/h	26	623	277	62	170	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	81	81	83	83
Heavy Vehicles, %	3	5	44	10	12	11
Mvmt Flow	31	742	342	77	205	34

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	419	0	-	0	1185	381
Stage 1	-	-	-	-	381	-
Stage 2	-	-	-	-	804	-
Critical Hdwy	4.13	-	-	-	6.52	6.31
Critical Hdwy Stg 1	-	-	-	-	5.52	-
Critical Hdwy Stg 2	-	-	-	-	5.52	-
Follow-up Hdwy	2.227	-	-	-	3.608	3.399
Pot Cap-1 Maneuver	1135	-	-	-	~ 199	647
Stage 1	-	-	-	-	669	-
Stage 2	-	-	-	-	424	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1135	-	-	-	~ 190	647
Mov Cap-2 Maneuver	-	-	-	-	~ 190	-
Stage 1	-	-	-	-	638	-
Stage 2	-	-	-	-	424	-

Approach	NB	SB	NE
HCM Control Delay, s	0.3	0	149.1
HCM LOS			F

Minor Lane/Major Mvmt	NELn1	NBL	NBT	SBT	SBR
Capacity (veh/h)	211	1135	-	-	-
HCM Lane V/C Ratio	1.131	0.027	-	-	-
HCM Control Delay (s)	149.1	8.3	0	-	-
HCM Lane LOS	F	A	A	-	-
HCM 95th %tile Q(veh)	11.3	0.1	-	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	11	14	3	578	266	5
Future Vol, veh/h	11	14	3	578	266	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	42	81	75	72	94	25
Heavy Vehicles, %	0	8	0	20	42	0
Mvmt Flow	26	17	4	803	283	20

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1104	293	303	0	-	0
Stage 1	293	-	-	-	-	-
Stage 2	811	-	-	-	-	-
Critical Hdwy	6.4	6.28	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.372	2.2	-	-	-
Pot Cap-1 Maneuver	236	732	1269	-	-	-
Stage 1	762	-	-	-	-	-
Stage 2	440	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	235	732	1269	-	-	-
Mov Cap-2 Maneuver	235	-	-	-	-	-
Stage 1	757	-	-	-	-	-
Stage 2	440	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.9	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1269	-	322	-	-
HCM Lane V/C Ratio	0.003	-	0.135	-	-
HCM Control Delay (s)	7.8	0	17.9	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.5	-	-

Intersection	
Int Delay, s/veh	63.7

Movement	EBL	EBR	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	140	185	355	357	89	203
Future Vol, veh/h	140	185	355	357	89	203
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	Yield
Storage Length	0	100	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	91	91	90	90
Heavy Vehicles, %	58	20	10	10	18	46
Mvmt Flow	156	206	390	392	99	226

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1384	212	99	0	-	0
Stage 1	212	-	-	-	-	-
Stage 2	1172	-	-	-	-	-
Critical Hdwy	6.98	6.4	4.2	-	-	-
Critical Hdwy Stg 1	5.98	-	-	-	-	-
Critical Hdwy Stg 2	5.98	-	-	-	-	-
Follow-up Hdwy	4.022	3.48	2.29	-	-	-
Pot Cap-1 Maneuver	~ 120	785	1445	-	-	-
Stage 1	707	-	-	-	-	-
Stage 2	229	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 79	785	1445	-	-	-
Mov Cap-2 Maneuver	~ 79	-	-	-	-	-
Stage 1	463	-	-	-	-	-
Stage 2	229	-	-	-	-	-

Approach	EB	NE	SW
HCM Control Delay, s	249.8	4.2	0
HCM LOS	F		

Minor Lane/Major Mvmt	NEL	NET	EBLn1	EBLn2	SWT	SWR
Capacity (veh/h)	1445	-	79	785	-	-
HCM Lane V/C Ratio	0.27	-	1.969	0.262	-	-
HCM Control Delay (s)	8.4	0$	565.1	11.2	-	-
HCM Lane LOS	A	A	F	B	-	-
HCM 95th %tile Q(veh)	1.1	-	13.8	1	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



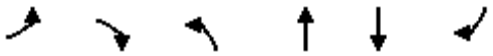
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	156	156	252	76	67	930
Future Volume (vph)	156	156	252	76	67	930
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	200		0	200	
Storage Lanes	1	1		0	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850	0.969			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1444	1583	1495	0	1456	1810
Flt Permitted	0.950				0.362	
Satd. Flow (perm)	1444	1583	1495	0	555	1810
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		184	28			
Link Speed (mph)	30		30			30
Link Distance (ft)	421		375			1049
Travel Time (s)	9.6		8.5			23.8
Peak Hour Factor	0.90	0.85	0.72	0.72	0.94	0.94
Heavy Vehicles (%)	25%	2%	8%	73%	24%	5%
Adj. Flow (vph)	173	184	350	106	71	989
Shared Lane Traffic (%)						
Lane Group Flow (vph)	173	184	456	0	71	989
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Turn Type	Perm	pm+ov	NA		pm+pt	NA
Protected Phases		5	6		5	2
Permitted Phases	8	8			2	
Detector Phase	8	5	6		5	2
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	23.0	9.5	23.0		9.5	23.0
Total Split (s)	23.0	11.0	36.0		11.0	47.0
Total Split (%)	32.9%	15.7%	51.4%		15.7%	67.1%
Maximum Green (s)	18.0	6.5	31.0		6.5	42.0
Yellow Time (s)	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	1.5	1.0	1.5		1.0	1.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	4.5	5.0		4.5	5.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	C-Max		None	C-Max

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Walk Time (s)	7.0		7.0			7.0
Flash Dont Walk (s)	11.0		11.0			11.0
Pedestrian Calls (#/hr)	0		0			0
Act Effct Green (s)	13.3	24.7	35.8		47.2	46.7
Actuated g/C Ratio	0.19	0.35	0.51		0.67	0.67
v/c Ratio	0.63	0.27	0.59		0.16	0.82
Control Delay	35.9	3.4	16.3		5.7	17.8
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	35.9	3.4	16.3		5.7	17.8
LOS	D	A	B		A	B
Approach Delay	19.2		16.3			17.0
Approach LOS	B		B			B
Queue Length 50th (ft)	69	0	121		9	267
Queue Length 95th (ft)	119	28	166		26	#625
Internal Link Dist (ft)	341		295			969
Turn Bay Length (ft)		200			200	
Base Capacity (vph)	371	683	777		460	1207
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.47	0.27	0.59		0.15	0.82

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 11 (16%), Referenced to phase 2:SBTL and 6:NBT, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 17.2		Intersection LOS: B	
Intersection Capacity Utilization 65.9%		ICU Level of Service C	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 1: NYS Route 32 & South Port Road





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	51	75	59	277	705	381
Future Volume (vph)	51	75	59	277	705	381
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125	0	0			0
Storage Lanes	1	1	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.953	
Flt Protected	0.950			0.991		
Satd. Flow (prot)	1504	1417	0	1570	1685	0
Flt Permitted	0.950			0.572		
Satd. Flow (perm)	1504	1417	0	906	1685	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		82			72	
Link Speed (mph)	45			55	55	
Link Distance (ft)	2072			957	365	
Travel Time (s)	31.4			11.9	4.5	
Peak Hour Factor	0.92	0.92	0.88	0.88	0.91	0.91
Heavy Vehicles (%)	20%	14%	10%	22%	11%	1%
Adj. Flow (vph)	55	82	67	315	775	419
Shared Lane Traffic (%)						
Lane Group Flow (vph)	55	82	0	382	1194	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Turn Type	Prot	Perm	Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4	2			
Detector Phase	4	4	2	2	6	
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	
Total Split (s)	22.5	22.5	42.5	42.5	42.5	
Total Split (%)	34.6%	34.6%	65.4%	65.4%	65.4%	
Maximum Green (s)	18.0	18.0	38.0	38.0	38.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	C-Min	C-Min	C-Min	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	
Act Effct Green (s)	7.9	7.9		51.0	51.0	
Actuated g/C Ratio	0.12	0.12		0.78	0.78	
v/c Ratio	0.30	0.34		0.54	0.89	
Control Delay	29.7	10.9		7.7	19.2	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	29.7	10.9		7.7	19.2	
LOS	C	B		A	B	
Approach Delay	18.4			7.7	19.2	
Approach LOS	B			A	B	
Queue Length 50th (ft)	20	0		49	277	
Queue Length 95th (ft)	48	33		131	#724	
Internal Link Dist (ft)	1992			877	285	
Turn Bay Length (ft)	125					
Base Capacity (vph)	416	451		711	1338	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.13	0.18		0.54	0.89	

Intersection Summary			
Area Type:	Other		
Cycle Length: 65			
Actuated Cycle Length: 65			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 16.6		Intersection LOS: B	
Intersection Capacity Utilization 76.8%		ICU Level of Service D	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 2: NYS Route 144 & NYS Route 32



Intersection	
Int Delay, s/veh	3

Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	36	258	445	285	59	40
Future Vol, veh/h	36	258	445	285	59	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	77	77	84	84	81	81
Heavy Vehicles, %	4	17	8	5	5	1
Mvmt Flow	47	335	530	339	73	49

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	869	0	-	0	1129	700
Stage 1	-	-	-	-	700	-
Stage 2	-	-	-	-	429	-
Critical Hdwy	4.14	-	-	-	6.45	6.21
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	2.236	-	-	-	3.545	3.309
Pot Cap-1 Maneuver	767	-	-	-	223	441
Stage 1	-	-	-	-	487	-
Stage 2	-	-	-	-	650	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	767	-	-	-	206	441
Mov Cap-2 Maneuver	-	-	-	-	206	-
Stage 1	-	-	-	-	450	-
Stage 2	-	-	-	-	650	-

Approach	NB	SB	NE
HCM Control Delay, s	1.2	0	30
HCM LOS			D

Minor Lane/Major Mvmt	NELn1	NBL	NBT	SBT	SBR
Capacity (veh/h)	263	767	-	-	-
HCM Lane V/C Ratio	0.465	0.061	-	-	-
HCM Control Delay (s)	30	10	0	-	-
HCM Lane LOS	D	A	A	-	-
HCM 95th %tile Q(veh)	2.3	0.2	-	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	2	6	251	443	13
Future Vol, veh/h	7	2	6	251	443	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	50	50	30	80	88	63
Heavy Vehicles, %	0	0	0	23	11	0
Mvmt Flow	14	4	20	314	503	21

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	868	514	524	0	-	0
Stage 1	514	-	-	-	-	-
Stage 2	354	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	325	564	1053	-	-	-
Stage 1	605	-	-	-	-	-
Stage 2	715	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	318	564	1053	-	-	-
Mov Cap-2 Maneuver	318	-	-	-	-	-
Stage 1	591	-	-	-	-	-
Stage 2	715	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.8	0.5	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1053	-	352	-	-
HCM Lane V/C Ratio	0.019	-	0.051	-	-
HCM Control Delay (s)	8.5	0	15.8	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Intersection	
Int Delay, s/veh	10.5

Movement	EBL	EBR	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	111	283	204	142	250	124
Future Vol, veh/h	111	283	204	142	250	124
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	Yield
Storage Length	0	100	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	45	3	9	8	4	32
Mvmt Flow	123	314	227	158	278	138

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	959	347	278	0	-	0
Stage 1	347	-	-	-	-	-
Stage 2	612	-	-	-	-	-
Critical Hdwy	6.85	6.23	4.19	-	-	-
Critical Hdwy Stg 1	5.85	-	-	-	-	-
Critical Hdwy Stg 2	5.85	-	-	-	-	-
Follow-up Hdwy	3.905	3.327	2.281	-	-	-
Pot Cap-1 Maneuver	239	694	1246	-	-	-
Stage 1	629	-	-	-	-	-
Stage 2	467	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	191	694	1246	-	-	-
Mov Cap-2 Maneuver	191	-	-	-	-	-
Stage 1	503	-	-	-	-	-
Stage 2	467	-	-	-	-	-

Approach	EB	NE	SW
HCM Control Delay, s	25.2	5	0
HCM LOS	D		

Minor Lane/Major Mvmt	NEL	NET	EBLn1	EBLn2	SWT	SWR
Capacity (veh/h)	1246	-	191	694	-	-
HCM Lane V/C Ratio	0.182	-	0.646	0.453	-	-
HCM Control Delay (s)	8.5	0	52.9	14.4	-	-
HCM Lane LOS	A	A	F	B	-	-
HCM 95th %tile Q(veh)	0.7	-	3.8	2.4	-	-



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	102	82	717	148	139	258
Future Volume (vph)	102	82	717	148	139	258
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	200		0	200	
Storage Lanes	1	1		0	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850	0.977			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	992	1029	1628	0	1262	1570
Flt Permitted	0.950				0.083	
Satd. Flow (perm)	992	1029	1628	0	110	1570
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		91	21			
Link Speed (mph)	30		30			30
Link Distance (ft)	421		375			1046
Travel Time (s)	9.6		8.5			23.8
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	82%	57%	6%	53%	43%	21%
Adj. Flow (vph)	113	91	797	164	154	287
Shared Lane Traffic (%)						
Lane Group Flow (vph)	113	91	961	0	154	287
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Turn Type	Perm	pm+ov	NA		pm+pt	NA
Protected Phases		1	2		1	6
Permitted Phases	8	8			6	6
Detector Phase	8	1	2		1	6
Switch Phase						
Minimum Initial (s)	5.0	3.5	5.0		3.5	5.0
Minimum Split (s)	10.0	8.0	25.0		8.0	25.0
Total Split (s)	20.0	10.0	50.0		10.0	60.0
Total Split (%)	25.0%	12.5%	62.5%		12.5%	75.0%
Maximum Green (s)	15.5	5.5	45.0		5.5	55.0
Yellow Time (s)	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	1.0	1.0	1.5		1.0	1.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.5	4.5	5.0		4.5	5.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	C-Max		None	C-Max

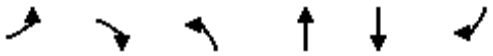
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Act Effct Green (s)	12.9	22.9	47.6		60.5	61.0
Actuated g/C Ratio	0.16	0.29	0.60		0.76	0.76
v/c Ratio	0.71	0.25	0.98		0.78	0.24
Control Delay	55.3	6.8	44.8		46.4	4.7
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	55.3	6.8	44.8		46.4	4.7
LOS	E	A	D		D	A
Approach Delay	33.7		44.8			19.2
Approach LOS	C		D			B
Queue Length 50th (ft)	53	0	~522		39	44
Queue Length 95th (ft)	#117	31	#752		#159	78
Internal Link Dist (ft)	341		295			966
Turn Bay Length (ft)		200			200	
Base Capacity (vph)	192	359	976		197	1196
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.59	0.25	0.98		0.78	0.24

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 10 (13%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.98
Intersection Signal Delay: 36.4 Intersection LOS: D
Intersection Capacity Utilization 71.7% ICU Level of Service C
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 20: NYS Route 32 & South Port Road





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	209	59	63	654	224	136
Future Volume (vph)	209	59	63	654	224	136
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125	0	0			0
Storage Lanes	1	1	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.949	
Flt Protected	0.950			0.996		
Satd. Flow (prot)	1245	1262	0	1721	1285	0
Flt Permitted	0.950			0.935		
Satd. Flow (perm)	1245	1262	0	1616	1285	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		68			81	
Link Speed (mph)	45			55	55	
Link Distance (ft)	2072			957	365	
Travel Time (s)	31.4			11.9	4.5	
Peak Hour Factor	0.87	0.87	0.86	0.86	0.90	0.90
Heavy Vehicles (%)	45%	28%	20%	9%	23%	69%
Adj. Flow (vph)	240	68	73	760	249	151
Shared Lane Traffic (%)						
Lane Group Flow (vph)	240	68	0	833	400	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Turn Type	Prot	Perm	Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4	2			
Detector Phase	4	4	2	2	6	
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	
Total Split (s)	22.5	22.5	42.5	42.5	42.5	
Total Split (%)	34.6%	34.6%	65.4%	65.4%	65.4%	
Maximum Green (s)	18.0	18.0	38.0	38.0	38.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	C-Min	C-Min	C-Min	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	
Act Effct Green (s)	15.9	15.9		40.1	40.1	
Actuated g/C Ratio	0.24	0.24		0.62	0.62	
v/c Ratio	0.79	0.19		0.84	0.49	
Control Delay	42.4	6.8		21.1	8.3	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	42.4	6.8		21.1	8.3	
LOS	D	A		C	A	
Approach Delay	34.5			21.1	8.3	
Approach LOS	C			C	A	
Queue Length 50th (ft)	85	0		251	63	
Queue Length 95th (ft)	#171	24		#464	127	
Internal Link Dist (ft)	1992			877	285	
Turn Bay Length (ft)	125					
Base Capacity (vph)	344	398		995	822	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.70	0.17		0.84	0.49	

Intersection Summary			
Area Type:	Other		
Cycle Length: 65			
Actuated Cycle Length: 65			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay: 20.5		Intersection LOS: C	
Intersection Capacity Utilization 80.8%		ICU Level of Service D	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 21: NYS Route 144 & NYS Route 32



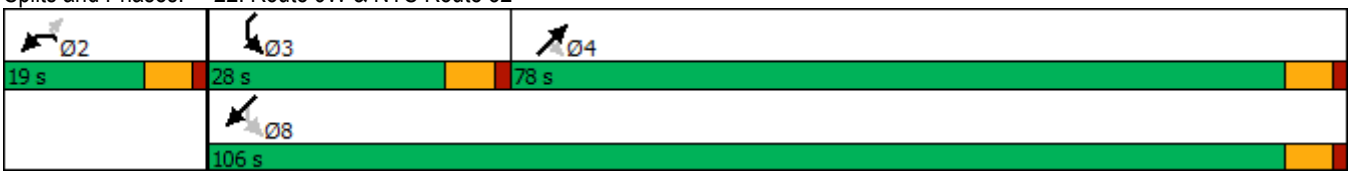
Lane Group	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Volume (vph)	100	238	2035	176	208	821
Future Volume (vph)	100	238	2035	176	208	821
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	75		200	100	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1530	1162	3505	1482	1150	3406
Flt Permitted	0.950				0.051	
Satd. Flow (perm)	1530	1162	3505	1482	62	3406
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		260		100		
Link Speed (mph)	45		45			45
Link Distance (ft)	1257		583			1004
Travel Time (s)	19.0		8.8			15.2
Peak Hour Factor	0.90	0.90	0.93	0.93	0.85	0.85
Heavy Vehicles (%)	18%	39%	3%	9%	57%	6%
Adj. Flow (vph)	111	264	2188	189	245	966
Shared Lane Traffic (%)						
Lane Group Flow (vph)	111	264	2188	189	245	966
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Turn Type	Prot	Perm	NA	Perm	pm+pt	NA
Protected Phases	2		4		3	8
Permitted Phases		2		4	8	8
Detector Phase	2	2	4	4	3	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	17.0	17.0	24.0	24.0	11.0	11.0
Total Split (s)	19.0	19.0	78.0	78.0	28.0	106.0
Total Split (%)	15.2%	15.2%	62.4%	62.4%	22.4%	84.8%
Maximum Green (s)	13.0	13.0	72.0	72.0	22.0	100.0
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	Max	None	None	None	None

Lane Group	NWL	NWR	NET	NER	SWL	SWT
Act Effct Green (s)	13.0	13.0	72.0	72.0	100.0	100.0
Actuated g/C Ratio	0.10	0.10	0.58	0.58	0.80	0.80
v/c Ratio	0.70	0.75	1.08	0.21	1.02	0.35
Control Delay	77.3	20.7	74.0	6.5	101.8	3.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.3	20.7	74.0	6.5	101.8	3.9
LOS	E	C	E	A	F	A
Approach Delay	37.4		68.6			23.7
Approach LOS	D		E			C
Queue Length 50th (ft)	88	3	~1042	31	~172	93
Queue Length 95th (ft)	#176	#116	#1178	67	#314	106
Internal Link Dist (ft)	1177		503			924
Turn Bay Length (ft)		75		200	100	
Base Capacity (vph)	159	353	2018	896	241	2724
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.75	1.08	0.21	1.02	0.35

Intersection Summary

Area Type: Other
Cycle Length: 125
Actuated Cycle Length: 125
Natural Cycle: 140
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.08
Intersection Signal Delay: 51.9 Intersection LOS: D
Intersection Capacity Utilization 88.3% ICU Level of Service E
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 22: Route 9W & NYS Route 32





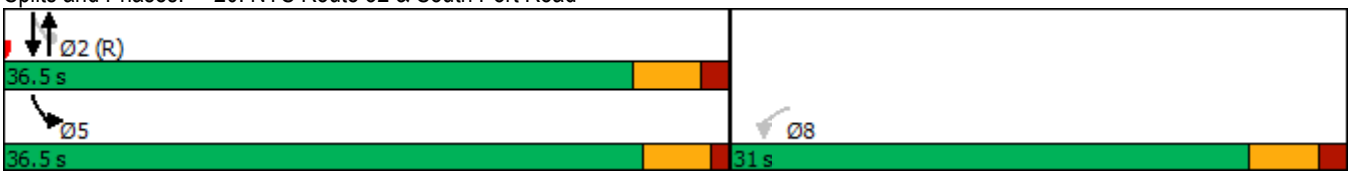
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	156	156	253	76	67	930
Future Volume (vph)	156	156	253	76	67	930
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.932		0.969			
Flt Protected	0.976				0.950	
Satd. Flow (prot)	1523	0	1496	0	1456	1810
Flt Permitted	0.976				0.000	
Satd. Flow (perm)	1523	0	1496	0	0	1810
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	87		30			
Link Speed (mph)	30		30			30
Link Distance (ft)	421		375			1049
Travel Time (s)	9.6		8.5			23.8
Peak Hour Factor	0.85	0.85	0.72	0.72	0.94	0.94
Heavy Vehicles (%)	25%	2%	8%	73%	24%	5%
Adj. Flow (vph)	184	184	351	106	71	989
Shared Lane Traffic (%)						
Lane Group Flow (vph)	368	0	457	0	71	989
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Turn Type	Perm		NA		pm+pt	NA
Protected Phases			2!		5!	2
Permitted Phases	8				2	
Detector Phase	8		2		5	2
Switch Phase						
Minimum Initial (s)	5.0		5.0		5.0	5.0
Minimum Split (s)	23.0		23.0		9.5	23.0
Total Split (s)	31.0		36.5		36.5	36.5
Total Split (%)	45.9%		54.1%		54.1%	54.1%
Maximum Green (s)	26.0		31.5		32.0	31.5
Yellow Time (s)	3.5		3.5		3.5	3.5
All-Red Time (s)	1.5		1.5		1.0	1.5
Lost Time Adjust (s)	0.0		0.0		0.0	0.0
Total Lost Time (s)	5.0		5.0		4.5	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		C-Max		None	C-Max
Walk Time (s)	7.0		7.0			7.0
Flash Dont Walk (s)	11.0		11.0			11.0
Pedestrian Calls (#/hr)	0		0			0

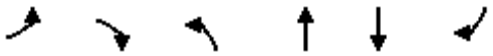
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Act Effct Green (s)	18.3		39.2		39.7	39.2
Actuated g/C Ratio	0.27		0.58		0.59	0.58
v/c Ratio	0.77		0.52		0.08	0.94
Control Delay	27.7		12.2		8.4	35.2
Queue Delay	0.0		0.0		0.0	0.0
Total Delay	27.7		12.2		8.4	35.2
LOS	C		B		A	D
Approach Delay	27.7		12.2			33.4
Approach LOS	C		B			C
Queue Length 50th (ft)	106		95		11	341
Queue Length 95th (ft)	150		152		36	#713
Internal Link Dist (ft)	341		295			969
Turn Bay Length (ft)						
Base Capacity (vph)	640		881		856	1050
Starvation Cap Reductn	0		0		0	0
Spillback Cap Reductn	0		0		0	0
Storage Cap Reductn	0		0		0	0
Reduced v/c Ratio	0.57		0.52		0.08	0.94

Intersection Summary			
Area Type:	Other		
Cycle Length: 67.5			
Actuated Cycle Length: 67.5			
Offset: 0 (0%), Referenced to phase 2:NBSB and 6:, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.94			
Intersection Signal Delay: 27.1		Intersection LOS: C	
Intersection Capacity Utilization 75.5%		ICU Level of Service D	
Analysis Period (min) 15			

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
! Phase conflict between lane groups.

Splits and Phases: 20: NYS Route 32 & South Port Road





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	58	75	59	235	672	413
Future Volume (vph)	58	75	59	235	672	413
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125	0	0			0
Storage Lanes	1	1	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.949	
Flt Protected	0.950			0.990		
Satd. Flow (prot)	1399	1417	0	1748	1679	0
Flt Permitted	0.950			0.544		
Satd. Flow (perm)	1399	1417	0	961	1679	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		82			82	
Link Speed (mph)	45			55	55	
Link Distance (ft)	2072			957	365	
Travel Time (s)	31.4			11.9	4.5	
Peak Hour Factor	0.92	0.92	0.88	0.88	0.91	0.91
Heavy Vehicles (%)	29%	14%	10%	7%	7%	8%
Adj. Flow (vph)	63	82	67	267	738	454
Shared Lane Traffic (%)						
Lane Group Flow (vph)	63	82	0	334	1192	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Turn Type	Prot	Perm	Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4	2			
Detector Phase	4	4	2	2	6	
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	
Total Split (s)	22.5	22.5	42.5	42.5	42.5	
Total Split (%)	34.6%	34.6%	65.4%	65.4%	65.4%	
Maximum Green (s)	18.0	18.0	38.0	38.0	38.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	C-Min	C-Min	C-Min	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	
Act Effct Green (s)	8.4	8.4		50.5	50.5	
Actuated g/C Ratio	0.13	0.13		0.78	0.78	
v/c Ratio	0.35	0.32		0.45	0.90	
Control Delay	30.3	10.2		6.3	20.7	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	30.3	10.2		6.3	20.7	
LOS	C	B		A	C	
Approach Delay	18.9			6.3	20.7	
Approach LOS	B			A	C	
Queue Length 50th (ft)	23	0		40	290	
Queue Length 95th (ft)	53	32		103	#733	
Internal Link Dist (ft)	1992			877	285	
Turn Bay Length (ft)	125					
Base Capacity (vph)	387	451		746	1322	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.16	0.18		0.45	0.90	

Intersection Summary			
Area Type:	Other		
Cycle Length: 65			
Actuated Cycle Length: 65			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.90			
Intersection Signal Delay: 17.7		Intersection LOS: B	
Intersection Capacity Utilization 75.0%		ICU Level of Service D	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 21: NYS Route 144 & NYS Route 32



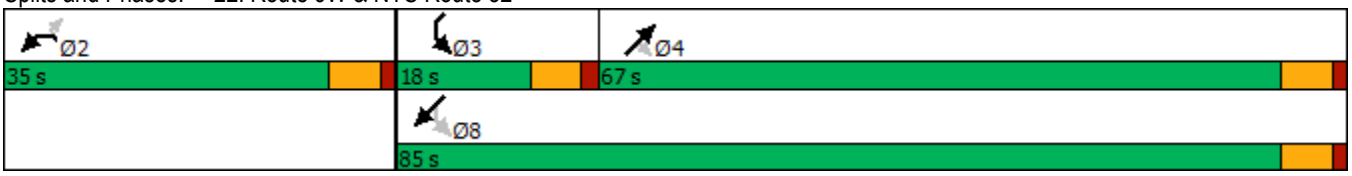
Lane Group	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Volume (vph)	306	184	1081	99	150	1439
Future Volume (vph)	306	184	1081	99	150	1439
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	75		200	100	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1719	1272	3471	1509	1299	3539
Flt Permitted	0.950				0.086	
Satd. Flow (perm)	1719	1272	3471	1509	118	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		95		96		
Link Speed (mph)	45		45			45
Link Distance (ft)	1257		583			1004
Travel Time (s)	19.0		8.8			15.2
Peak Hour Factor	0.91	0.91	0.91	0.91	0.94	0.94
Heavy Vehicles (%)	5%	27%	4%	7%	39%	2%
Adj. Flow (vph)	336	202	1188	109	160	1531
Shared Lane Traffic (%)						
Lane Group Flow (vph)	336	202	1188	109	160	1531
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Turn Type	Prot	Perm	NA	Perm	pm+pt	NA
Protected Phases	2		4		3	8
Permitted Phases		2		4	8	8
Detector Phase	2	2	4	4	3	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	17.0	17.0	24.0	24.0	11.0	11.0
Total Split (s)	35.0	35.0	67.0	67.0	18.0	85.0
Total Split (%)	29.2%	29.2%	55.8%	55.8%	15.0%	70.8%
Maximum Green (s)	29.0	29.0	61.0	61.0	12.0	79.0
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	Max	None	None	None	None

Lane Group	NWL	NWR	NET	NER	SWL	SWT
Act Effct Green (s)	29.3	29.3	42.6	42.6	59.5	59.5
Actuated g/C Ratio	0.29	0.29	0.42	0.42	0.59	0.59
v/c Ratio	0.67	0.46	0.81	0.16	0.81	0.73
Control Delay	41.9	21.4	30.4	4.9	52.7	17.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.9	21.4	30.4	4.9	52.7	17.1
LOS	D	C	C	A	D	B
Approach Delay	34.2		28.3			20.4
Approach LOS	C		C			C
Queue Length 50th (ft)	192	54	348	5	60	345
Queue Length 95th (ft)	#375	146	429	34	#182	418
Internal Link Dist (ft)	1177		503			924
Turn Bay Length (ft)		75		200	100	
Base Capacity (vph)	499	436	2120	959	211	2799
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.46	0.56	0.11	0.76	0.55

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 101			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 25.4		Intersection LOS: C	
Intersection Capacity Utilization 70.1%		ICU Level of Service C	
Analysis Period (min) 15			

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 22: Route 9W & NYS Route 32



APPENDIX C

SYNCHRO MODEL CAPACITY ANALYSIS RESULTS

- 2019 Existing Conditions
  - AM Peak
  - PM Peak

- 2029 Background Conditions
  - AM Peak
  - PM Peak

- 2029 Build-Phase I Conditions
  - AM Peak
  - PM Peak

- 2029 Build-Phase II Conditions
  - AM Peak
  - PM Peak

- 2029 Build-Phase III Conditions
  - AM Peak
  - PM Peak

- 2029 Build-Phase III-Mitigation Conditions
  - AM Peak
  - PM Peak

- 2029 Build-Phase III-Truck Sensitivity North/East
  - AM Peak
  - PM Peak

- 2029 Build-Phase III-Truck Sensitivity South
  - AM Peak
  - PM Peak

- 2029 Build-Phase III-Truck Sensitivity West
  - AM Peak
  - PM Peak

APPENDIX D

SIGNAL WARRANT ANALYSIS

- NYS Route 144/NYS Route 32 Signal Warrant Worksheet - Existing
- NYS Route 144/Glenmont Road Signal Warrant Worksheet – Existing
- NYS Route 144/NYS Route 32 Signal Warrant Worksheet – Phase III
- NYS Route 144/Glenmont Road Signal Warrant Worksheet – Phase III
- NYS Route 144/Proposed Site Driveway Signal Warrant Worksheet – Phase III

SIGNAL WARRANT WORKSHEET

(Based on MUTCD 2009 Edition Signal Warrant Guidelines)

Project Name		Port of Albany	
Date:	4/1/2019	Analyst:	TCH
Major Street		NYS Route 144	
# of Lanes per Direction		1	
Minor Street		Corning Hill Road	
# of Lanes per Direction		1	

Warrants Met:

Warrant:		**Met?**
Warrant 1 – Eight Hour Vehicular Volume	1A	N
	1B	Y
	1C	N
Warrant 2 – Four Hour Vehicular Volume		N
Warrant 3 – Peak Hour	3A	N
	3B	N
Warrant 4 – Pedestrian Volume	4A	N
	4B	N
Warrant 5 – School Crossings		N
Warrant 6 – Coordinated Signal System		N
Warrant 7 – Crash Experience		N
Warrant 8 – Roadway Network		N
Warrant 9 – Intersection Near a Grade Crossing		N
Signal Should be Considered?		**N**

Traffic Volume Data:

Hour	Both Approach Volumes		Higher Volume Approach		Crossing Ped. Volume	
	Major	Minor	Major	Minor	Major	Minor
7:00-8:00	875	126	596	126	0	0
8:00-9:00	763	122	521	122	0	0
9:00-10:00	721	125	454	125	0	0
Noon-1:00	571	100	321	100	0	0
2:00-3:00	599	90	344	90	0	0
3:00-4:00	662	82	410	82	0	0
4:00-5:00	1108	85	840	85	0	0
5:00-6:00	1053	87	829	87	0	0
AM Peak	918	143	674	143	0	0
PM Peak	1205	94	953	94	0	0

Accident Data:

Time Frame (Mo.)	Total Number of Accidents	Property Damage/Injury Acc.	Acc. Correctable with a Traffic Signal
NA	NA	NA	NA

Applicable Signal Warrant Details:

Warrant 1, Eight-Hour Vehicular Volume

The need for a traffic control signal shall be considered if an engineering study finds that one of the following conditions exist for each of any 8 hours of an average day:
A. The vehicles per hour given in both of the 70 percent columns of Condition A in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection; or

No hours meet warrant 1A

B. The vehicles per hour given in both of the 70 percent columns of Condition B in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection.

Yes, all 8 hours meet warrant 1B

In applying each condition, the major-street and minor-street volumes shall be for the same 8 hours. On the minor street, the higher volume shall not be required to be on the same approach during each of these 8 hours.
C. The need for a traffic control signal shall be considered if an engineering study finds that both of the following conditions exist for each of any 8 hours of an average day:

A. The vehicles per hour given in both of the 56 percent columns of Condition A in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection; and

B. The vehicles per hour given in both of the 56 percent columns of Condition B in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection.

No, only three hours meet both the Warrant 1A & 1B 56% columns

These major-street and minor-street volumes shall be for the same 8 hours for each condition; however, the 8 hours satisfied in Condition A shall not be required to be the same 8 hours satisfied in Condition B. On the minor street, the higher volume shall not be required to be on the same approach during each of the 8 hours.

Table 4C-1. Warrant 1, Eight-Hour Vehicular Volume

Condition A—Minimum Vehicular Volume

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%[a]	80%[b]	70%[c]	56%[d]	100%[a]	80%[b]	70%[c]	56%[d]
1	1	500	400	350	280	150	120	105	84
2 or more	1	600	480	420	336	150	120	105	84
2 or more	2 or more	600	480	420	336	200	160	140	112
1	2 or more	500	400	350	280	200	160	140	112

Condition B—Interruption of Continuous Traffic

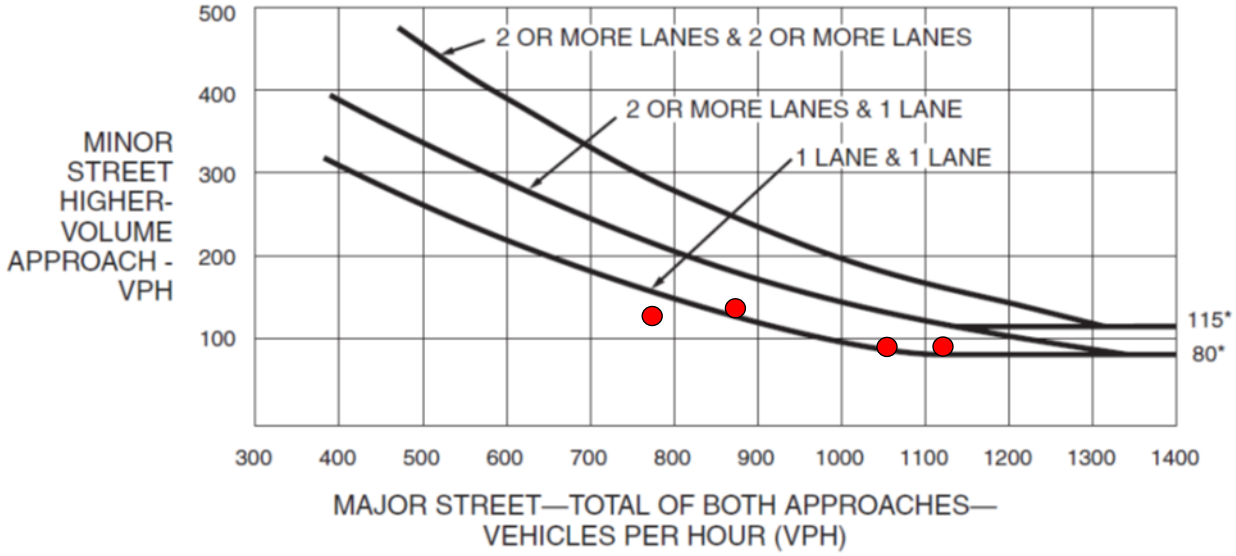
Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%[a]	80%[b]	70%[c]	56%[d]	100%[a]	80%[b]	70%[c]	56%[d]
1	1	750	600	525	420	75	60	53	42
2 or more	1	900	720	630	504	75	60	53	42
2 or more	2 or more	900	720	630	504	100	80	70	56
1	2 or more	750	600	525	420	100	80	70	56

[a] Basic minimum hourly volume
[b] Used for combination of Conditions A and B after adequate trial of other remedial measures
[c] May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000
[d] May be used for combination of Conditions A and B after adequate trial of other remedial measures when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000

Warrant 2, Four-Hour Vehicular Volume

The need for a traffic control signal shall be considered if an engineering study finds that, for each of any 4 hours of an average day, the plotted points representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) all fall above the applicable curve in Figure 4C-1 for the existing combination of approach lanes. On the minor street, the higher volume shall not be required to be on the same approach during each of these 4 hours.

Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

No, only three hours meet Warrant 2.

Warrant 3, Peak Hour

This signal warrant shall be applied only in unusual cases, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time. The need for a traffic control signal shall be considered if an engineering study finds that the criteria in either of the following two categories are met:

A. If all three of the following conditions exist for the same 1 hour (any four consecutive 15-minute periods) of an average day:
1. The total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach; and

No, the minor approach has 2.00 hours of delay during the morning peak hour.

2. The volume on the same minor-street approach (one direction only) equals or exceeds 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes; and

Yes, the Minor-street approach does exceed 100 vehicles per hour (208 vehicles per hour during the AM peak hour & 133 vehicles per hour during the PM).

3. The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for Intersections with three approaches.

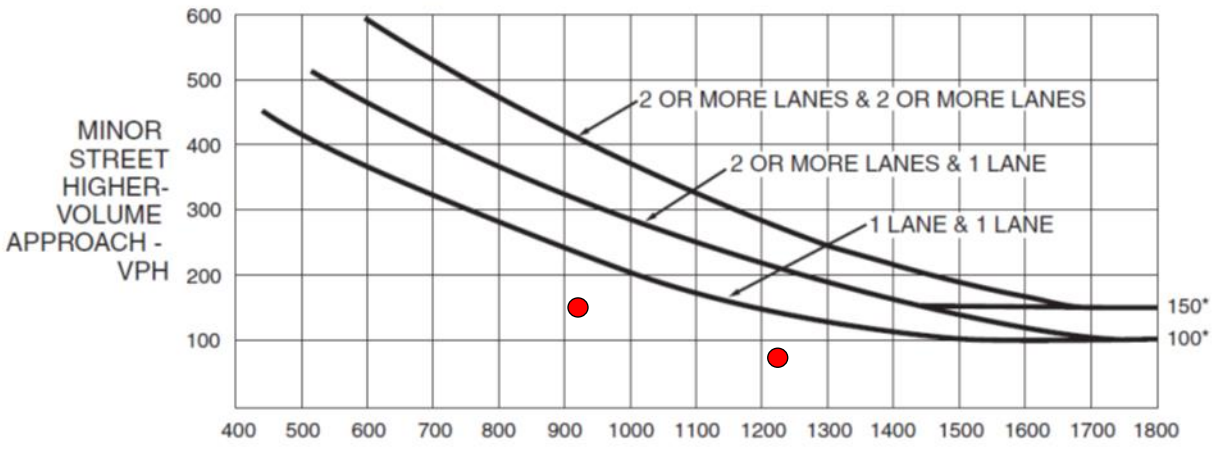
Yes, the total entering volume does exceed 650 vehicles per hour (1207 vehicles per hour during the AM peak hour and 1469 vehicles per hour during the PM peak hour.

B. The plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) for 1 hour (any four consecutive 15-minute periods) of an average day falls above the applicable curve in Figure 4C-3 for the existing combination of approach lanes.

Neither Peak Hour meets warrant 3B.

If this warrant is the only warrant met and a traffic control signal is justified by an engineering study, the traffic control signal may be operated in the flashing mode during the hours that the volume criteria of this warrant are not met.

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Warrant 4, Pedestrian Volume

The need for a traffic control signal at an intersection or midblock crossing shall be considered if an engineering study finds that one of the following criteria is met:

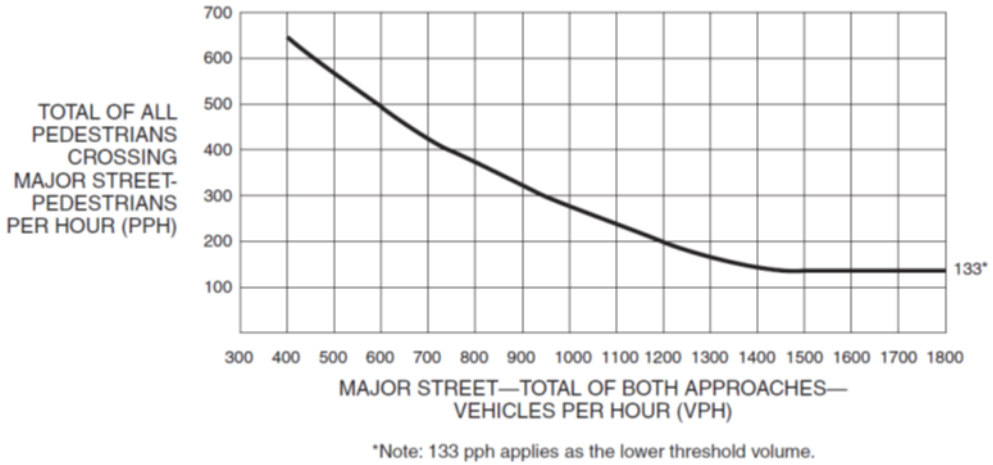
A. For each of any 4 hours of an average day, the plotted points representing the vehicles per hour on the major street (total of both approaches) and the corresponding pedestrians per hour crossing the major street (total of all crossings) all fall above the curve in Figure 4C-5; or

B. For 1 hour (any four consecutive 15-minute periods) of an average day, the plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding pedestrians per hour crossing the major street (total of all crossings) falls above the curve in Figure 4C-7.

The Pedestrian Volume signal warrant shall not be applied at locations where the distance to the nearest traffic control signal or STOP sign controlling the street that pedestrians desire to cross is less than 300 feet, unless the proposed traffic control signal will not restrict the progressive movement of traffic.

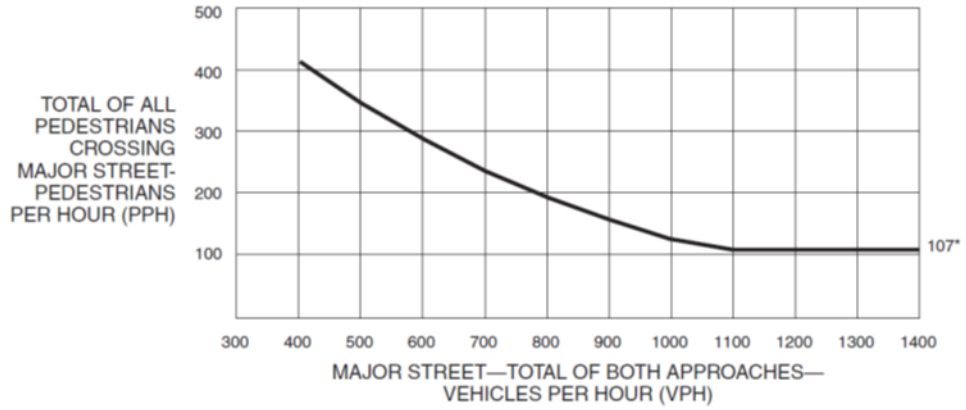
Warrant Not Met, no pedestrians were observed during the traffic counts.

Figure 4C-7. Warrant 4, Pedestrian Peak Hour



*Note: 133 pph applies as the lower threshold volume.

Figure 4C-5. Warrant 4, Pedestrian Four-Hour Volume



*Note: 107 pph applies as the lower threshold volume.

Warrant 5, School Crossing

The need for a traffic control signal shall be considered when an engineering study of the frequency and adequacy of gaps in the vehicular traffic stream as related to the number and size of groups of school children at an established school crossing across the major street shows that the number of adequate gaps in the traffic stream during the period when the schoolchildren are using the crossing is less than the number of minutes in the same period (see Section 7A.03) and there are a minimum of 20 schoolchildren during the highest crossing hour.

Before a decision is made to install a traffic control signal, consideration shall be given to the implementation of other remedial measures, such as warning signs and flashers, school speed zones, school crossing guards, or a grade-separated crossing.

The School Crossing signal warrant shall not be applied at locations where the distance to the nearest traffic control signal along the major street is less than 300 feet, unless the proposed traffic control signal will not restrict the progressive movement of traffic.

Warrant Not Met, No school in the vicinity of the intersection.

Warrant 6, Coordinated Signal System

The need for a traffic control signal shall be considered if an engineering study finds that one of the following criteria is met:

A. On a one-way street or a street that has traffic predominantly in one direction, the adjacent traffic control signals are so far apart that they do not provide the necessary degree of vehicular platooning. **(Not Applicable)**

B. On a two-way street, adjacent traffic control signals do not provide the necessary degree of platooning and the proposed and adjacent traffic control signals will collectively provide a progressive operation. **(Not Applicable)**

Warrant 7, Crash Experience

The need for a traffic control signal shall be considered if an engineering study finds that all of the following criteria are met:

A. Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency; and **(NOT REVIEWED)**

B. Five or more reported crashes, of types susceptible to correction by a traffic control signal, have occurred within a 12-month period, each crash involving personal injury or property damage apparently exceeding the applicable requirements for a reportable crash; and **(NOT REVIEWED)**

C. For each of any 8 hours of an average day, the vehicles per hour (vph) given in both of the 56 percent columns of Condition A in Table 4C-1 (see Section 4C.02), or the vph in both of the 56 percent columns of Condition B in Table 4C-1 exists on the major-street and the higher-volume minor-street approach, respectively, to the intersection, or the volume of pedestrian traffic is not less than 70 percent of the requirements specified in the Pedestrian Volume warrant. These major-street and minor-street volumes shall be for the same 8 hours. On the minor street, the higher volume shall not be required to be on the same approach during each of the 8 hours**. (NOT REVIEWED)**

Warrant 8, Roadway Network

The need for a traffic control signal shall be considered if an engineering study finds that the common intersection of two or more major routes meets one or both of the following criteria:

A. The intersection has a total existing, or immediately projected, entering volume of at least 1,000 vehicles per hour during the peak hour of a typical weekday and has 5-year projected traffic volumes, based on an engineering study, that meet one or more of Warrants 1, 2, and 3 during an average weekday; or **(Proposed entering volume is 1299 vehicles during the PM peak hour)**

B. The intersection has a total existing or immediately projected entering volume of at least 1,000 vehicles per hour for each of any 5 hours of a non-normal business day (Saturday or Sunday). **(NOT REVIEWED)**

A major route as used in this signal warrant shall have at least one of the following characteristics:

A. It is part of the street or highway system that serves as the principal roadway network for through traffic flow.
B. It includes rural or suburban highways outside, entering, or traversing a city.
C. It appears as a major route on an official plan, such as a major street plan in an urban area traffic and transportation study.

Warrant not met based on condition A

Warrant 9, Intersection Near a Grade Crossing

The need for a traffic control signal shall be considered if an engineering study finds that both of the following criteria are met:

A. A grade crossing exists on an approach controlled by a STOP or YIELD sign and the center of the track nearest to the intersection is within 140 feet of the stop line or yield line on the approach; and **(NOT MET)**
B. During the highest traffic volume hour during which rail traffic uses the crossing, the plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the minor-street approach that crosses the track (one direction only, approaching the intersection) falls above the applicable curve in Figure 4C-9 or 4C-10 for the existing combination of approach lanes over the track and the distance D, which is the clear storage distance as defined in Section 1A.13. **(NOT MET)**

Warrant not met no railroad crossing in close proximity to the intersection.

SIGNAL WARRANT WORKSHEET

(Based on MUTCD 2009 Edition Signal Warrant Guidelines)

Project Name		Port of Albany	
Date:	4/1/2019	Analyst:	TCH
Major Street		NYS Route 144	
# of Lanes per Direction		1	
Minor Street		Glenmont Road	
# of Lanes per Direction		1	

Warrants Met:

Warrant:		**Met?**
Warrant 1 – Eight Hour Vehicular Volume	1A	NA
	1B	NA
	1C	NA
Warrant 2 – Four Hour Vehicular Volume		N
Warrant 3 – Peak Hour	3A	N
	3B	Y
Warrant 4 – Pedestrian Volume	4A	N
	4B	N
Warrant 5 – School Crossings		N
Warrant 6 – Coordinated Signal System		N
Warrant 7 – Crash Experience		N
Warrant 8 – Roadway Network		N
Warrant 9 – Intersection Near a Grade Crossing		N
Signal Should be Considered?		**Y**

Traffic Volume Data:

Hour	Both Approach Volumes		Higher Volume Approach		Crossing Ped. Volume	
	Major	Minor	Major	Minor	Major	Minor
7:00-8:00	725	158	497	158	0	0
8:00-9:00	534	181	347	181	0	0
Noon-1:00					0	0
1:00-2:00					0	0
2:00-3:00					0	0
3:00-4:00					0	0
4:00-5:00	797	85	599	85	0	0
5:00-6:00	783	59	613	59	0	0
AM Peak	757	178	532	178	0	0
PM Peak	853	88	654	88	0	0

Accident Data:

Time Frame (Mo.)	Total Number of Accidents	Property Damage/Injury Acc.	Acc. Correctable with a Traffic Signal
NA	NA	NA	NA

Applicable Signal Warrant Details:

Warrant 1, Eight-Hour Vehicular Volume

The need for a traffic control signal shall be considered if an engineering study finds that one of the following conditions exist for each of any 8 hours of an average day:
A. The vehicles per hour given in both of the 70 percent columns of Condition A in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection; or

B. The vehicles per hour given in both of the 70 percent columns of Condition B in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection.

In applying each condition the major-street and minor-street volumes shall be for the same 8 hours. On the minor street, the higher volume shall not be required to be on the same approach during each of these 8 hours.
C. The need for a traffic control signal shall be considered if an engineering study finds that both of the following conditions exist for each of any 8 hours of an average day:

A. The vehicles per hour given in both of the 56 percent columns of Condition A in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection; and
B. The vehicles per hour given in both of the 56 percent columns of Condition B in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection.

These major-street and minor-street volumes shall be for the same 8 hours for each condition; however, the 8 hours satisfied in Condition A shall not be required to be the same 8 hours satisfied in Condition B. On the minor street, the higher volume shall not be required to be on the same approach during each of the 8 hours.

Table 4C-1. Warrant 1, Eight-Hour Vehicular Volume

Condition A—Minimum Vehicular Volume

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%[a]	80%[b]	70%[c]	56%[d]	100%[a]	80%[b]	70%[c]	56%[d]
1	1	500	400	350	280	150	120	105	84
2 or more	1	600	480	420	336	150	120	105	84
2 or more	2 or more	600	480	420	336	200	160	140	112
1	2 or more	500	400	350	280	200	160	140	112

Condition B—Interruption of Continuous Traffic

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%[a]	80%[b]	70%[c]	56%[d]	100%[a]	80%[b]	70%[c]	56%[d]
1	1	750	600	525	420	75	60	53	42
2 or more	1	900	720	630	504	75	60	53	42
2 or more	2 or more	900	720	630	504	100	80	70	56
1	2 or more	750	600	525	420	100	80	70	56

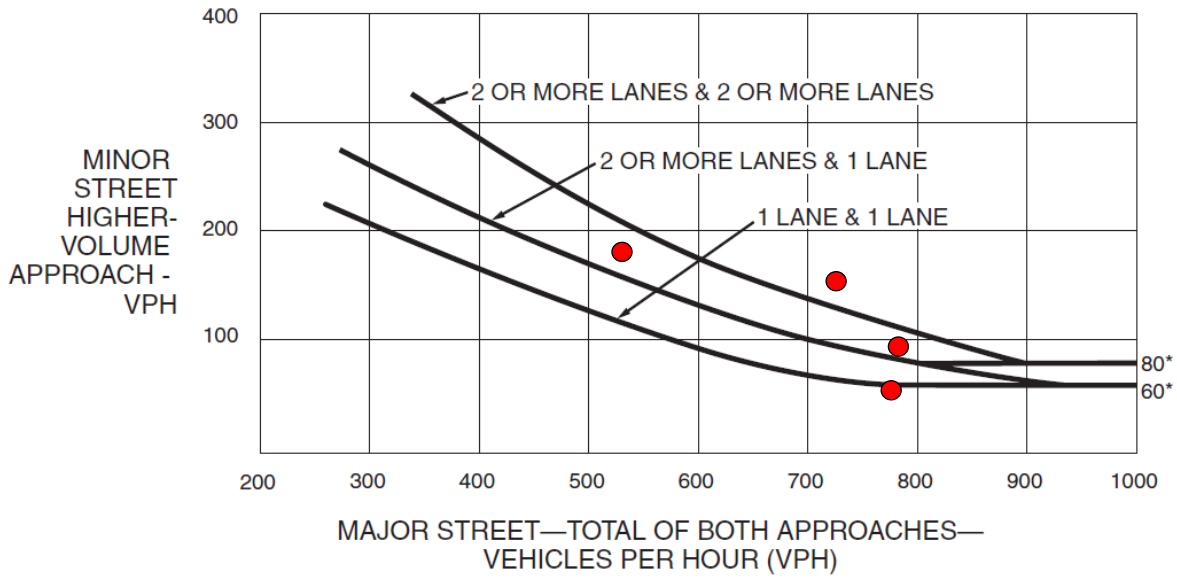
[a] Basic minimum hourly volume
[b] Used for combination of Conditions A and B after adequate trial of other remedial measures
[c] May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000
[d] May be used for combination of Conditions A and B after adequate trial of other remedial measures when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000

Warrant 2, Four-Hour Vehicular Volume

The need for a traffic control signal shall be considered if an engineering study finds that, for each of any 4 hours of an average day, the plotted points representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) all fall above the applicable curve in Figure 4C-2 for the existing combination of approach lanes. On the minor street, the higher volume shall not be required to be on the same approach during each of these 4 hours.

Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

No, only three hours meet Warrant 2.

Warrant 3, Peak Hour

This signal warrant shall be applied only in unusual cases, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time. The need for a traffic control signal shall be considered if an engineering study finds that the criteria in either of the following two categories are met:

A. If all three of the following conditions exist for the same 1 hour (any four consecutive 15-minute periods) of an average day:
1. The total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach; and

No, Glenmont Road has 1.96 hours of delay during the evening peak hour

2. The volume on the same minor-street approach (one direction only) equals or exceeds 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes; and

Yes, the Minor-street approach does exceed 100 vehicles per hour (178 vehicles per hour during the AM peak hour).

3. The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for Intersections with three approaches.

Yes, the total entering volume does exceed 650 vehicles per hour (935 vehicles per hour during the AM peak hour and 941 vehicles per hour during the PM peak hour).

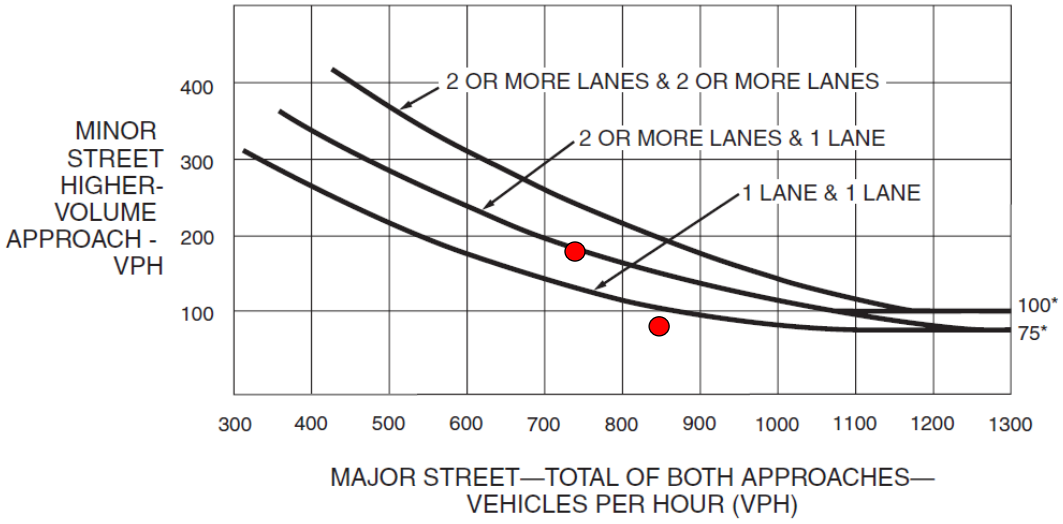
B. The plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) for 1 hour (any four consecutive 15-minute periods) of an average day falls above the applicable curve in Figure 4C-4 for the existing combination of approach lanes.

Yes, the morning peak hour meets warrant 3B.

If this warrant is the only warrant met and a traffic control signal is justified by an engineering study, the traffic control signal may be operated in the flashing mode during the hours that the volume criteria of this warrant are not met.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Warrant 4, Pedestrian Volume

The need for a traffic control signal at an intersection or midblock crossing shall be considered if an engineering study finds that one of the following criteria is met:

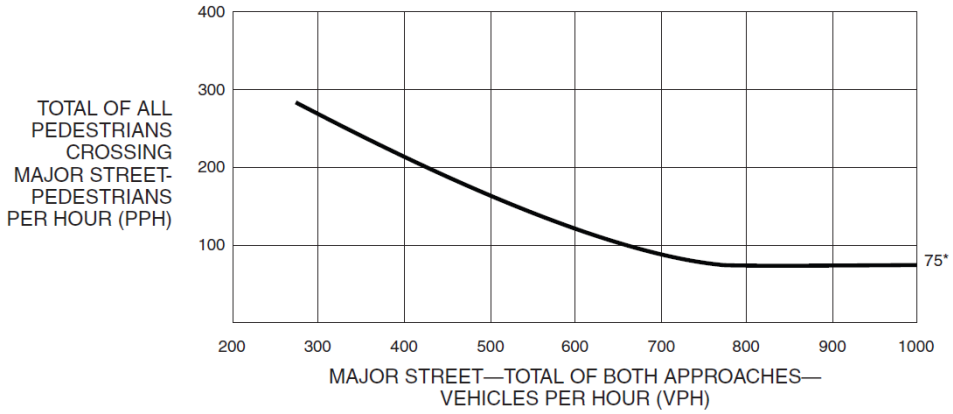
A. For each of any 4 hours of an average day, the plotted points representing the vehicles per hour on the major street (total of both approaches) and the corresponding pedestrians per hour crossing the major street (total of all crossings) all fall above the curve in Figure 4C-6; or

B. For 1 hour (any four consecutive 15-minute periods) of an average day, the plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding pedestrians per hour crossing the major street (total of all crossings) falls above the curve in Figure 4C-8.

The Pedestrian Volume signal warrant shall not be applied at locations where the distance to the nearest traffic control signal or STOP sign controlling the street that pedestrians desire to cross is less than 300 feet, unless the proposed traffic control signal will not restrict the progressive movement of traffic.

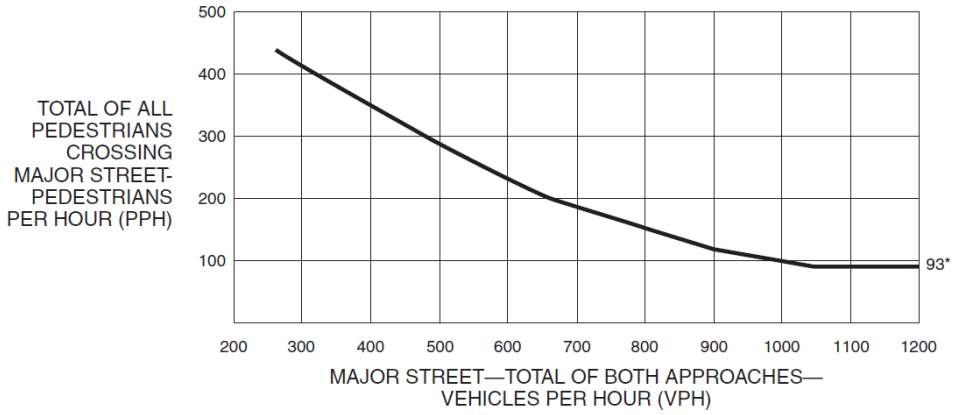
Warrant Not Met, no pedestrians were observed during the traffic counts.

Figure 4C-6. Warrant 4, Pedestrian Four-Hour Volume (70% Factor)



*Note: 75 pph applies as the lower threshold volume.

Figure 4C-8. Warrant 4, Pedestrian Peak Hour (70% Factor)



*Note: 93 pph applies as the lower threshold volume.

Warrant 5, School Crossing

The need for a traffic control signal shall be considered when an engineering study of the frequency and adequacy of gaps in the vehicular traffic stream as related to the number and size of groups of school children at an established school crossing across the major street shows that the number of adequate gaps in the traffic stream during the period when the schoolchildren are using the crossing is less than the number of minutes in the same period (see Section 7A.03) and there are a minimum of 20 schoolchildren during the highest crossing hour.

Before a decision is made to install a traffic control signal, consideration shall be given to the implementation of other remedial measures, such as warning signs and flashers, school speed zones, school crossing guards, or a grade-separated crossing.

The School Crossing signal warrant shall not be applied at locations where the distance to the nearest traffic control signal along the major street is less than 300 feet, unless the proposed traffic control signal will not restrict the progressive movement of traffic.

Warrant Not Met, No school in the vicinity of the intersection.

Warrant 6, Coordinated Signal System

The need for a traffic control signal shall be considered if an engineering study finds that one of the following criteria is met:

A. On a one-way street or a street that has traffic predominantly in one direction, the adjacent traffic control signals are so far apart that they do not provide the necessary degree of vehicular platooning. **(Not Applicable)**

B. On a two-way street, adjacent traffic control signals do not provide the necessary degree of platooning and the proposed and adjacent traffic control signals will collectively provide a progressive operation. **(Not Applicable)**

Warrant 7, Crash Experience

The need for a traffic control signal shall be considered if an engineering study finds that all of the following criteria are met:

A. Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency; and **(NOT REVIEWED)**

B. Five or more reported crashes, of types susceptible to correction by a traffic control signal, have occurred within a 12-month period, each crash involving personal injury or property damage apparently exceeding the applicable requirements for a reportable crash; and **(NOT REVIEWED)**

C. For each of any 8 hours of an average day, the vehicles per hour (vph) given in both of the 56 percent columns of Condition A in Table 4C-1 (see Section 4C.02), or the vph in both of the 56 percent columns of Condition B in Table 4C-1 exists on the major-street and the higher-volume minor-street approach, respectively, to the intersection, or the volume of pedestrian traffic is not less than 70 percent of the requirements specified in the Pedestrian Volume warrant. These major-street and minor-street volumes shall be for the same 8 hours. On the minor street, the higher volume shall not be required to be on the same approach during each of the 8 hours**. (NOT REVIEWED)**

Warrant 8, Roadway Network

The need for a traffic control signal shall be considered if an engineering study finds that the common intersection of two or more major routes meets one or both of the following criteria:

A. The intersection has a total existing, or immediately projected, entering volume of at least 1,000 vehicles per hour during the peak hour of a typical weekday and has 5-year projected traffic volumes, based on an engineering study, that meet one or more of Warrants 1, 2, and 3 during an average weekday; or **(No, proposed entering volume is 935 vehicles during the am peak hour and 941 vehicles during the PM peak hour).**

B. The intersection has a total existing or immediately projected entering volume of at least 1,000 vehicles per hour for each of any 5 hours of a non-normal business day (Saturday or Sunday). **(NOT REVIEWED)**

A major route as used in this signal warrant shall have at least one of the following characteristics:

A. It is part of the street or highway system that serves as the principal roadway network for through traffic flow.
B. It includes rural or suburban highways outside, entering, or traversing a city.
C. It appears as a major route on an official plan, such as a major street plan in an urban area traffic and transportation study.

Warrant not met based on condition A

Warrant 9, Intersection Near a Grade Crossing

The need for a traffic control signal shall be considered if an engineering study finds that both of the following criteria are met:

A. A grade crossing exists on an approach controlled by a STOP or YIELD sign and the center of the track nearest to the intersection is within 140 feet of the stop line or yield line on the approach; and **(NOT MET)**
B. During the highest traffic volume hour during which rail traffic uses the crossing, the plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the minor-street approach that crosses the track (one direction only, approaching the intersection) falls above the applicable curve in Figure 4C-9 or 4C-10 for the existing combination of approach lanes over the track and the distance D, which is the clear storage distance as defined in Section 1A.13. **(NOT MET)**

Warrant not met no railroad crossing in close proximity to the intersection.

SIGNAL WARRANT WORKSHEET

(Based on MUTCD 2009 Edition Signal Warrant Guidelines)

Project Name		Port of Albany	
Date:	4/1/2019	Analyst:	TCH
Major Street		NYS Route 144	
# of Lanes per Direction		1	
Minor Street		Corning Hill Road	
# of Lanes per Direction		1	

Warrants Met:

Warrant:		Met?
Warrant 1 – Eight Hour Vehicular Volume	1A	NA
	1B	NA
	1C	NA
Warrant 2 – Four Hour Vehicular Volume		Y
Warrant 3 – Peak Hour	3A	Y
	3B	Y
Warrant 4 – Pedestrian Volume	4A	N
	4B	N
Warrant 5 – School Crossings		N
Warrant 6 – Coordinated Signal System		N
Warrant 7 – Crash Experience		N
Warrant 8 – Roadway Network		N
Warrant 9 – Intersection Near a Grade Crossing		N
Signal Should be Considered?		**Y**

Traffic Volume Data:

Hour	Both Approach Volumes		Higher Volume Approach		Crossing Ped. Volume	
	Major	Minor	Major	Minor	Major	Minor
7:00-8:00	936	162	667	162	0	0
8:00-9:00	836	145	554	145	0	0
Noon-1:00						
2:00-3:00						
3:00-4:00						
4:00-5:00	1199	108	910	108	0	0
5:00-6:00	1140	109	899	109	0	0
6:00-7:00						
AM Peak	999	208	715	208		
PM Peak	1336	133	1057	133		

Accident Data:

Time Frame (Mo.)	Total Number of Accidents	Property Damage/Injury Acc.	Acc. Correctable with a Traffic Signal
NA	NA	NA	NA

Applicable Signal Warrant Details:

Warrant 1, Eight-Hour Vehicular Volume

The need for a traffic control signal shall be considered if an engineering study finds that one of the following conditions exist for each of any 8 hours of an average day:
A. The vehicles per hour given in both of the 70 percent columns of Condition A in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection; or

B. The vehicles per hour given in both of the 70 percent columns of Condition B in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection.

In applying each condition, the major-street and minor-street volumes shall be for the same 8 hours. On the minor street, the higher volume shall not be required to be on the same approach during each of these 8 hours.
C. The need for a traffic control signal shall be considered if an engineering study finds that both of the following conditions exist for each of any 8 hours of an average day:

A. The vehicles per hour given in both of the 56 percent columns of Condition A in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection; and
B. The vehicles per hour given in both of the 56 percent columns of Condition B in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection.

These major-street and minor-street volumes shall be for the same 8 hours for each condition; however, the 8 hours satisfied in Condition A shall not be required to be the same 8 hours satisfied in Condition B. On the minor street, the higher volume shall not be required to be on the same approach during each of the 8 hours.

Table 4C-1. Warrant 1, Eight-Hour Vehicular Volume

Condition A—Minimum Vehicular Volume

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%[a]	80%[b]	70%[c]	56%[d]	100%[a]	80%[b]	70%[c]	56%[d]
1	1	500	400	350	280	150	120	105	84
2 or more	1	600	480	420	336	150	120	105	84
2 or more	2 or more	600	480	420	336	200	160	140	112
1	2 or more	500	400	350	280	200	160	140	112

Condition B—Interruption of Continuous Traffic

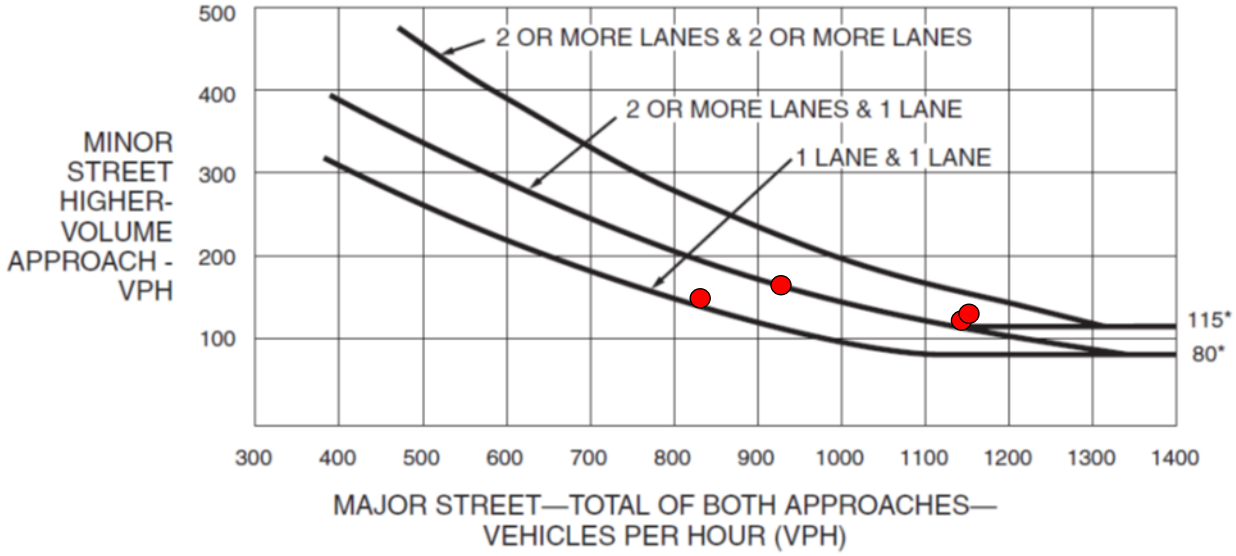
Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%[a]	80%[b]	70%[c]	56%[d]	100%[a]	80%[b]	70%[c]	56%[d]
1	1	750	600	525	420	75	60	53	42
2 or more	1	900	720	630	504	75	60	53	42
2 or more	2 or more	900	720	630	504	100	80	70	56
1	2 or more	750	600	525	420	100	80	70	56

[a] Basic minimum hourly volume
[b] Used for combination of Conditions A and B after adequate trial of other remedial measures
[c] May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000
[d] May be used for combination of Conditions A and B after adequate trial of other remedial measures when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000

Warrant 2, Four-Hour Vehicular Volume

The need for a traffic control signal shall be considered if an engineering study finds that, for each of any 4 hours of an average day, the plotted points representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) all fall above the applicable curve in Figure 4C-1 for the existing combination of approach lanes. On the minor street, the higher volume shall not be required to be on the same approach during each of these 4 hours.

Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

Yes, all four hours meet or exceed the threshold for the "1 Lane & 1 Lane" Curve, therefore Warrant 2 is met.

Warrant 3, Peak Hour

This signal warrant shall be applied only in unusual cases, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time. The need for a traffic control signal shall be considered if an engineering study finds that the criteria in either of the following two categories are met:

A. If all three of the following conditions exist for the same 1 hour (any four consecutive 15-minute periods) of an average day:
1. The total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach; and

The minor approach has 6.29 hours of delay during the morning peak hour.

2. The volume on the same minor-street approach (one direction only) equals or exceeds 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes; and

Minor-street approach does exceed 100 vehicles per hour (208 vehicles per hour during the AM peak hour & 133 vehicles per hour during the PM).

3. The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for Intersections with three approaches.

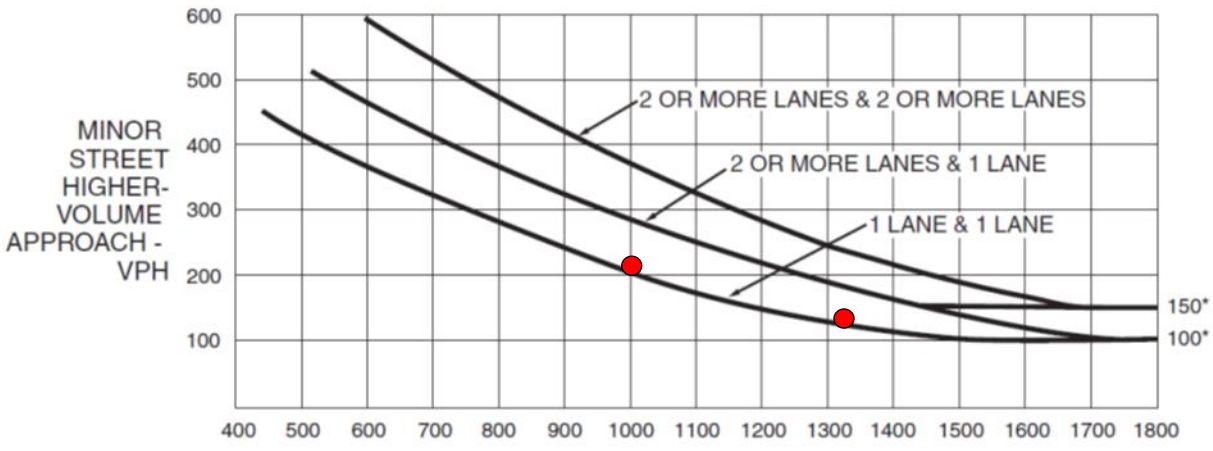
Yes, the total entering volume does exceed 650 vehicles per hour (1207 vehicles per hour during the AM peak hour and 1469 vehicles per hour during the PM peak hour.

B. The plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) for 1 hour (any four consecutive 15-minute periods) of an average day falls above the applicable curve in Figure 4C-3 for the existing combination of approach lanes.

Yes, the morning peak hour meets Warrant 3B.

If this warrant is the only warrant met and a traffic control signal is justified by an engineering study, the traffic control signal may be operated in the flashing mode during the hours that the volume criteria of this warrant are not met.

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Warrant 4, Pedestrian Volume

The need for a traffic control signal at an intersection or midblock crossing shall be considered if an engineering study finds that one of the following criteria is met:

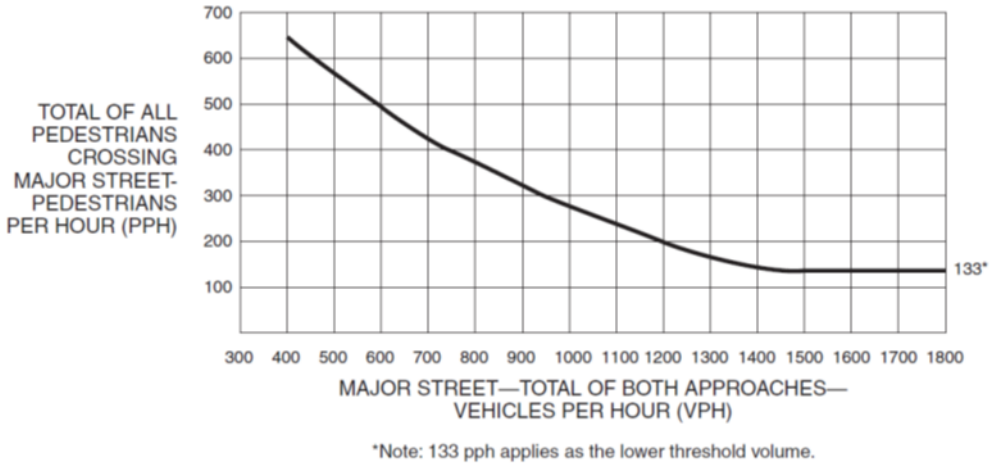
A. For each of any 4 hours of an average day, the plotted points representing the vehicles per hour on the major street (total of both approaches) and the corresponding pedestrians per hour crossing the major street (total of all crossings) all fall above the curve in Figure 4C-5; or

B. For 1 hour (any four consecutive 15-minute periods) of an average day, the plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding pedestrians per hour crossing the major street (total of all crossings) falls above the curve in Figure 4C-7.

The Pedestrian Volume signal warrant shall not be applied at locations where the distance to the nearest traffic control signal or STOP sign controlling the street that pedestrians desire to cross is less than 300 feet, unless the proposed traffic control signal will not restrict the progressive movement of traffic.

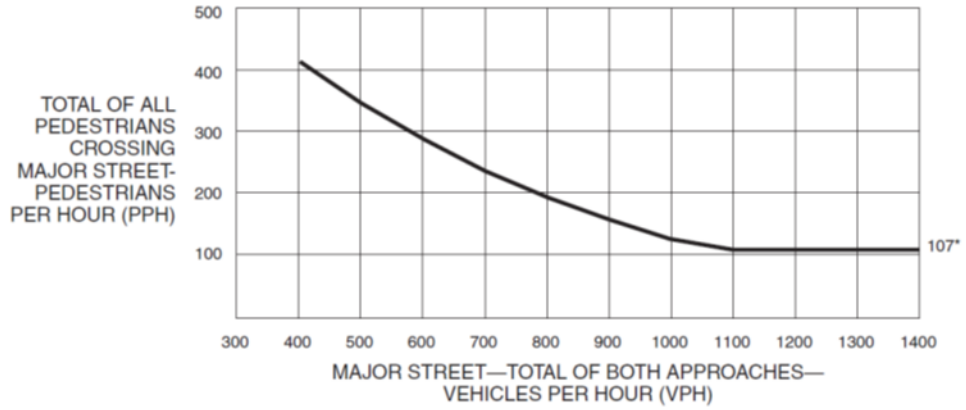
Warrant Not Met, no pedestrians were observed during the traffic counts.

Figure 4C-7. Warrant 4, Pedestrian Peak Hour



*Note: 133 pph applies as the lower threshold volume.

Figure 4C-5. Warrant 4, Pedestrian Four-Hour Volume



*Note: 107 pph applies as the lower threshold volume.

Warrant 5, School Crossing

The need for a traffic control signal shall be considered when an engineering study of the frequency and adequacy of gaps in the vehicular traffic stream as related to the number and size of groups of school children at an established school crossing across the major street shows that the number of adequate gaps in the traffic stream during the period when the schoolchildren are using the crossing is less than the number of minutes in the same period (see Section 7A.03) and there are a minimum of 20 schoolchildren during the highest crossing hour.

Before a decision is made to install a traffic control signal, consideration shall be given to the implementation of other remedial measures, such as warning signs and flashers, school speed zones, school crossing guards, or a grade-separated crossing.

The School Crossing signal warrant shall not be applied at locations where the distance to the nearest traffic control signal along the major street is less than 300 feet, unless the proposed traffic control signal will not restrict the progressive movement of traffic.

Warrant Not Met, No school in the vicinity of the intersection.

Warrant 6, Coordinated Signal System

The need for a traffic control signal shall be considered if an engineering study finds that one of the following criteria is met:

A. On a one-way street or a street that has traffic predominantly in one direction, the adjacent traffic control signals are so far apart that they do not provide the necessary degree of vehicular platooning. **(Not Applicable)**

B. On a two-way street, adjacent traffic control signals do not provide the necessary degree of platooning and the proposed and adjacent traffic control signals will collectively provide a progressive operation. **(Not Applicable)**

Warrant 7, Crash Experience

The need for a traffic control signal shall be considered if an engineering study finds that all of the following criteria are met:

A. Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency; and **(NOT REVIEWED)**

B. Five or more reported crashes, of types susceptible to correction by a traffic control signal, have occurred within a 12-month period, each crash involving personal injury or property damage apparently exceeding the applicable requirements for a reportable crash; and **(NOT REVIEWED)**

C. For each of any 8 hours of an average day, the vehicles per hour (vph) given in both of the 56 percent columns of Condition A in Table 4C-1 (see Section 4C.02), or the vph in both of the 56 percent columns of Condition B in Table 4C-1 exists on the major-street and the higher-volume minor-street approach, respectively, to the intersection, or the volume of pedestrian traffic is not less than 70 percent of the requirements specified in the Pedestrian Volume warrant. These major-street and minor-street volumes shall be for the same 8 hours. On the minor street, the higher volume shall not be required to be on the same approach during each of the 8 hours**. (NOT REVIEWED)**

Warrant 8, Roadway Network

The need for a traffic control signal shall be considered if an engineering study finds that the common intersection of two or more major routes meets one or both of the following criteria:

A. The intersection has a total existing, or immediately projected, entering volume of at least 1,000 vehicles per hour during the peak hour of a typical weekday and has 5-year projected traffic volumes, based on an engineering study, that meet one or more of Warrants 1, 2, and 3 during an average weekday; or **(Proposed entering volume is 1469 vehicles during the PM peak hour and Warrant 3 was met)**

B. The intersection has a total existing or immediately projected entering volume of at least 1,000 vehicles per hour for each of any 5 hours of a non-normal business day (Saturday or Sunday). **(NOT REVIEWED)**

A major route as used in this signal warrant shall have at least one of the following characteristics:

A. It is part of the street or highway system that serves as the principal roadway network for through traffic flow.
B. It includes rural or suburban highways outside, entering, or traversing a city.
C. It appears as a major route on an official plan, such as a major street plan in an urban area traffic and transportation study.

Warrant not met based on condition A

Warrant 9, Intersection Near a Grade Crossing

The need for a traffic control signal shall be considered if an engineering study finds that both of the following criteria are met:

A. A grade crossing exists on an approach controlled by a STOP or YIELD sign and the center of the track nearest to the intersection is within 140 feet of the stop line or yield line on the approach; and **(NOT MET)**
B. During the highest traffic volume hour during which rail traffic uses the crossing, the plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the minor-street approach that crosses the track (one direction only, approaching the intersection) falls above the applicable curve in Figure 4C-9 or 4C-10 for the existing combination of approach lanes over the track and the distance D, which is the clear storage distance as defined in Section 1A.13. **(NOT MET)**

Warrant not met no railroad crossing in close proximity to the intersection.

SIGNAL WARRANT WORKSHEET

(Based on MUTCD 2009 Edition Signal Warrant Guidelines)

Project Name		Port of Albany	
Date:	4/1/2019	Analyst:	TCH
Major Street		NYS Route 144	
# of Lanes per Direction		1	
Minor Street		Glenmont Road	
# of Lanes per Direction		1	

Warrants Met:

Warrant:		**Met?**
Warrant 1 – Eight Hour Vehicular Volume	1A	NA
	1B	NA
	1C	NA
Warrant 2 – Four Hour Vehicular Volume		Y
Warrant 3 – Peak Hour	3A	N
	3B	Y
Warrant 4 – Pedestrian Volume	4A	N
	4B	N
Warrant 5 – School Crossings		N
Warrant 6 – Coordinated Signal System		N
Warrant 7 – Crash Experience		N
Warrant 8 – Roadway Network		N
Warrant 9 – Intersection Near a Grade Crossing		N
Signal Should be Considered?		**Y**

Traffic Volume Data:

Hour	Both Approach Volumes		Higher Volume Approach		Crossing Ped. Volume	
	Major	Minor	Major	Minor	Major	Minor
7:00-8:00	773	171	528	171	0	0
8:00-9:00	573	196	371	196	0	0
Noon-1:00						
2:00-3:00						
3:00-4:00						
4:00-5:00	855	98	632	98		
5:00-6:00	840	65	646	65	0	0
6:00-7:00						
AM Peak	820	198	572	198		
PM Peak	932	99	695	99		

Accident Data:

Time Frame (Mo.)	Total Number of Accidents	Property Damage/Injury Acc.	Acc. Correctable with a Traffic Signal
NA	NA	NA	NA

Applicable Signal Warrant Details:

Warrant 1, Eight-Hour Vehicular Volume

The need for a traffic control signal shall be considered if an engineering study finds that one of the following conditions exist for each of any 8 hours of an average day:
A. The vehicles per hour given in both of the 70 percent columns of Condition A in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection; or

B. The vehicles per hour given in both of the 70 percent columns of Condition B in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection.

In applying each condition the major-street and minor-street volumes shall be for the same 8 hours. On the minor street, the higher volume shall not be required to be on the same approach during each of these 8 hours.
C. The need for a traffic control signal shall be considered if an engineering study finds that both of the following conditions exist for each of any 8 hours of an average day:

A. The vehicles per hour given in both of the 56 percent columns of Condition A in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection; and
B. The vehicles per hour given in both of the 56 percent columns of Condition B in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection.

These major-street and minor-street volumes shall be for the same 8 hours for each condition; however, the 8 hours satisfied in Condition A shall not be required to be the same 8 hours satisfied in Condition B. On the minor street, the higher volume shall not be required to be on the same approach during each of the 8 hours.

Table 4C-1. Warrant 1, Eight-Hour Vehicular Volume

Condition A—Minimum Vehicular Volume

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%[a]	80%[b]	70%[c]	56%[d]	100%[a]	80%[b]	70%[c]	56%[d]
1	1	500	400	350	280	150	120	105	84
2 or more	1	600	480	420	336	150	120	105	84
2 or more	2 or more	600	480	420	336	200	160	140	112
1	2 or more	500	400	350	280	200	160	140	112

Condition B—Interruption of Continuous Traffic

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%[a]	80%[b]	70%[c]	56%[d]	100%[a]	80%[b]	70%[c]	56%[d]
1	1	750	600	525	420	75	60	53	42
2 or more	1	900	720	630	504	75	60	53	42
2 or more	2 or more	900	720	630	504	100	80	70	56
1	2 or more	750	600	525	420	100	80	70	56

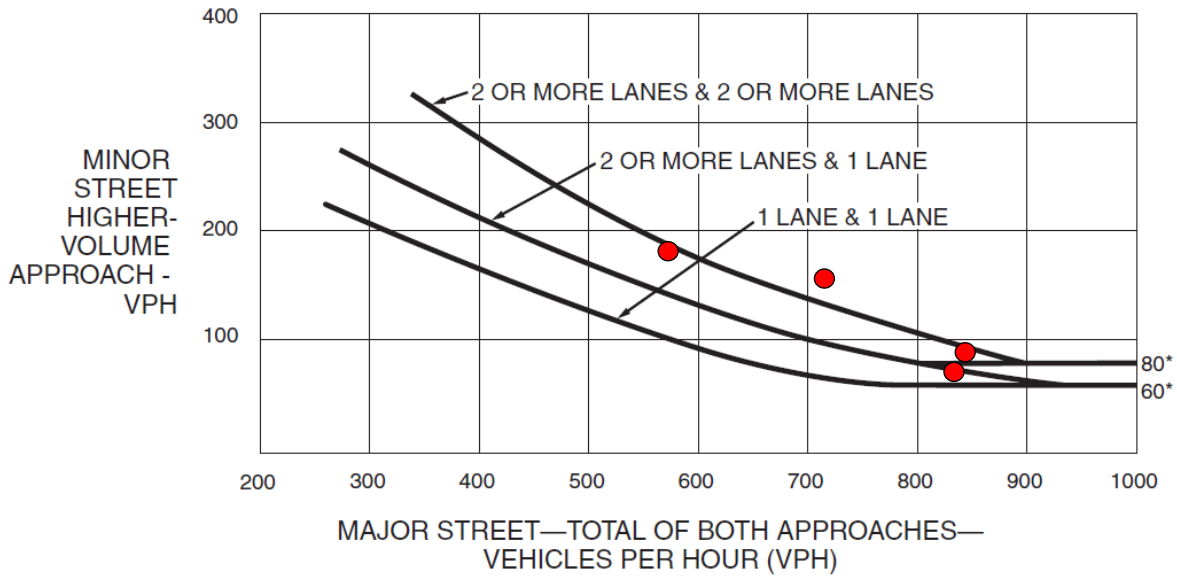
[a] Basic minimum hourly volume
[b] Used for combination of Conditions A and B after adequate trial of other remedial measures
[c] May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000
[d] May be used for combination of Conditions A and B after adequate trial of other remedial measures when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000

Warrant 2, Four-Hour Vehicular Volume

The need for a traffic control signal shall be considered if an engineering study finds that, for each of any 4 hours of an average day, the plotted points representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) all fall above the applicable curve in Figure 4C-2 for the existing combination of approach lanes. On the minor street, the higher volume shall not be required to be on the same approach during each of these 4 hours.

Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

Yes, all four hours meet warrant 2.

Warrant 3, Peak Hour

This signal warrant shall be applied only in unusual cases, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time. The need for a traffic control signal shall be considered if an engineering study finds that the criteria in either of the following two categories are met:

A. If all three of the following conditions exist for the same 1 hour (any four consecutive 15-minute periods) of an average day:
1. The total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach; and

Development driveway has 3.39 hours of delay during the evening peak hour

2. The volume on the same minor-street approach (one direction only) equals or exceeds 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes; and

Minor-street approach does exceed 100 vehicles per hour (172 vehicles per hour during the AM peak hour).

3. The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for Intersections with three approaches.

Yes, the total entering volume does exceed 650 vehicles per hour (1018 vehicles per hour during the AM peak hour and 1031 vehicles per hour during the PM peak hour.

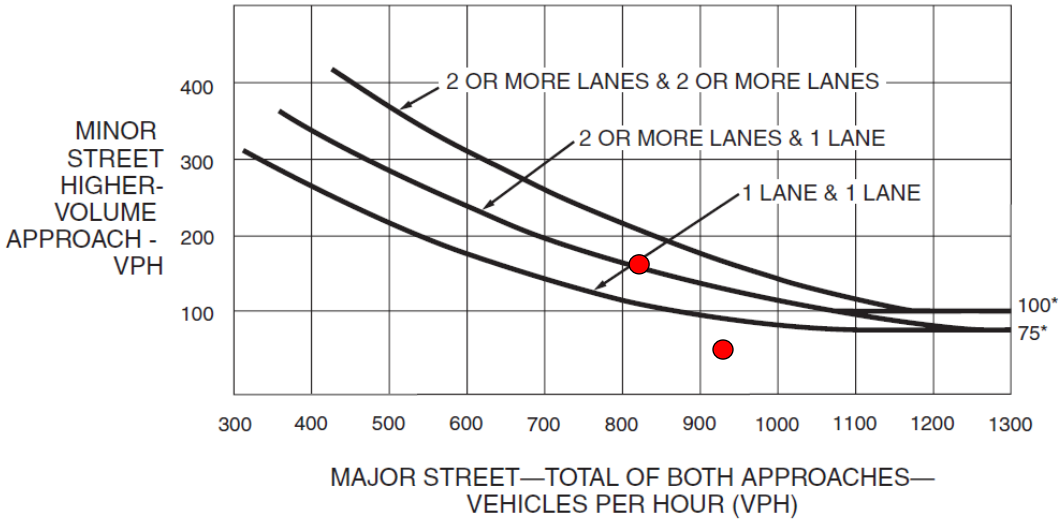
B. The plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) for 1 hour (any four consecutive 15-minute periods) of an average day falls above the applicable curve in Figure 4C-4 for the existing combination of approach lanes.

Yes, the morning peak hour meets warrant 3B.

If this warrant is the only warrant met and a traffic control signal is justified by an engineering study, the traffic control signal may be operated in the flashing mode during the hours that the volume criteria of this warrant are not met.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Warrant 4, Pedestrian Volume

The need for a traffic control signal at an intersection or midblock crossing shall be considered if an engineering study finds that one of the following criteria is met:

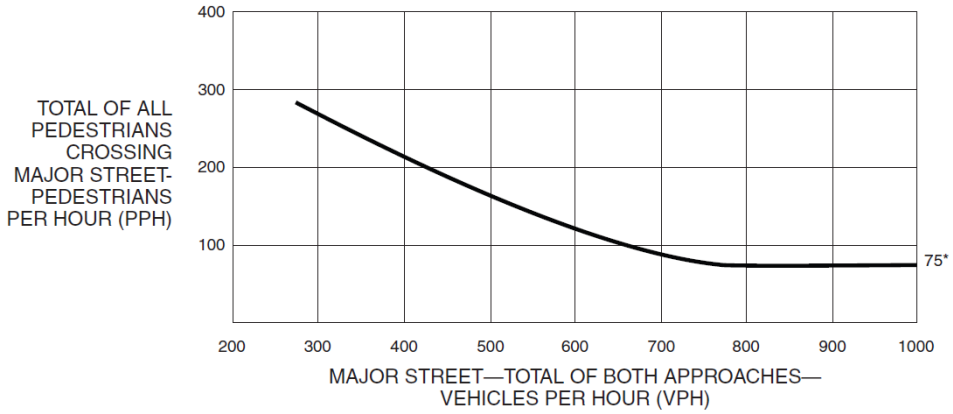
A. For each of any 4 hours of an average day, the plotted points representing the vehicles per hour on the major street (total of both approaches) and the corresponding pedestrians per hour crossing the major street (total of all crossings) all fall above the curve in Figure 4C-6; or

B. For 1 hour (any four consecutive 15-minute periods) of an average day, the plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding pedestrians per hour crossing the major street (total of all crossings) falls above the curve in Figure 4C-8.

The Pedestrian Volume signal warrant shall not be applied at locations where the distance to the nearest traffic control signal or STOP sign controlling the street that pedestrians desire to cross is less than 300 feet, unless the proposed traffic control signal will not restrict the progressive movement of traffic.

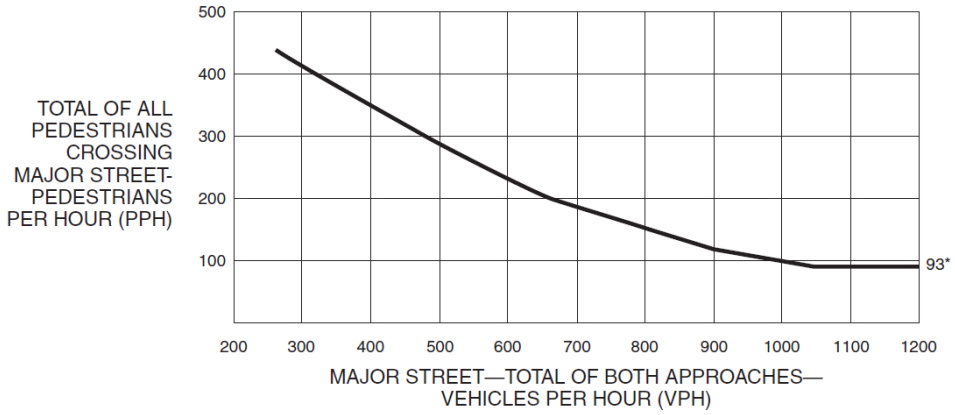
Warrant Not Met, no pedestrians were observed during the traffic counts.

Figure 4C-6. Warrant 4, Pedestrian Four-Hour Volume (70% Factor)



*Note: 75 pph applies as the lower threshold volume.

Figure 4C-8. Warrant 4, Pedestrian Peak Hour (70% Factor)



*Note: 93 pph applies as the lower threshold volume.

Warrant 5, School Crossing

The need for a traffic control signal shall be considered when an engineering study of the frequency and adequacy of gaps in the vehicular traffic stream as related to the number and size of groups of school children at an established school crossing across the major street shows that the number of adequate gaps in the traffic stream during the period when the schoolchildren are using the crossing is less than the number of minutes in the same period (see Section 7A.03) and there are a minimum of 20 schoolchildren during the highest crossing hour.

Before a decision is made to install a traffic control signal, consideration shall be given to the implementation of other remedial measures, such as warning signs and flashers, school speed zones, school crossing guards, or a grade-separated crossing.

The School Crossing signal warrant shall not be applied at locations where the distance to the nearest traffic control signal along the major street is less than 300 feet, unless the proposed traffic control signal will not restrict the progressive movement of traffic.

Warrant Not Met, No school in the vicinity of the intersection.

Warrant 6, Coordinated Signal System

The need for a traffic control signal shall be considered if an engineering study finds that one of the following criteria is met:

A. On a one-way street or a street that has traffic predominantly in one direction, the adjacent traffic control signals are so far apart that they do not provide the necessary degree of vehicular platooning. **(Not Applicable)**

B. On a two-way street, adjacent traffic control signals do not provide the necessary degree of platooning and the proposed and adjacent traffic control signals will collectively provide a progressive operation. **(Not Applicable)**

Warrant 7, Crash Experience

The need for a traffic control signal shall be considered if an engineering study finds that all of the following criteria are met:

A. Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency; and **(NOT REVIEWED)**

B. Five or more reported crashes, of types susceptible to correction by a traffic control signal, have occurred within a 12-month period, each crash involving personal injury or property damage apparently exceeding the applicable requirements for a reportable crash; and **(NOT REVIEWED)**

C. For each of any 8 hours of an average day, the vehicles per hour (vph) given in both of the 56 percent columns of Condition A in Table 4C-1 (see Section 4C.02), or the vph in both of the 56 percent columns of Condition B in Table 4C-1 exists on the major-street and the higher-volume minor-street approach, respectively, to the intersection, or the volume of pedestrian traffic is not less than 70 percent of the requirements specified in the Pedestrian Volume warrant. These major-street and minor-street volumes shall be for the same 8 hours. On the minor street, the higher volume shall not be required to be on the same approach during each of the 8 hours**. (NOT REVIEWED)**

Warrant 8, Roadway Network

The need for a traffic control signal shall be considered if an engineering study finds that the common intersection of two or more major routes meets one or both of the following criteria:

A. The intersection has a total existing, or immediately projected, entering volume of at least 1,000 vehicles per hour during the peak hour of a typical weekday and has 5-year projected traffic volumes, based on an engineering study, that meet one or more of Warrants 1, 2, and 3 during an average weekday; or **(Proposed entering volume is 1031 vehicles during the PM peak hour and Warrant 3B was met)**

B. The intersection has a total existing or immediately projected entering volume of at least 1,000 vehicles per hour for each of any 5 hours of a non-normal business day (Saturday or Sunday). **(NOT REVIEWED)**

A major route as used in this signal warrant shall have at least one of the following characteristics:

A. It is part of the street or highway system that serves as the principal roadway network for through traffic flow.
B. It includes rural or suburban highways outside, entering, or traversing a city.
C. It appears as a major route on an official plan, such as a major street plan in an urban area traffic and transportation study.

Warrant not met based on condition A

Warrant 9, Intersection Near a Grade Crossing

The need for a traffic control signal shall be considered if an engineering study finds that both of the following criteria are met:

A. A grade crossing exists on an approach controlled by a STOP or YIELD sign and the center of the track nearest to the intersection is within 140 feet of the stop line or yield line on the approach; and **(NOT MET)**
B. During the highest traffic volume hour during which rail traffic uses the crossing, the plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the minor-street approach that crosses the track (one direction only, approaching the intersection) falls above the applicable curve in Figure 4C-9 or 4C-10 for the existing combination of approach lanes over the track and the distance D, which is the clear storage distance as defined in Section 1A.13. **(NOT MET)**

Warrant not met no railroad crossing in close proximity to the intersection.

SIGNAL WARRANT WORKSHEET

(Based on MUTCD 2009 Edition Signal Warrant Guidelines)

Project Name		Port of Albany	
Date:	4/1/2019	Analyst:	TCH
Major Street		NYS Route 144	
# of Lanes per Direction		1	
Minor Street		Proposed Site Driveway	
# of Lanes per Direction		1	

Warrants Met:

Warrant:		**Met?**
Warrant 1 – Eight Hour Vehicular Volume	1A	NA
	1B	NA
	1C	NA
Warrant 2 – Four Hour Vehicular Volume		N
Warrant 3 – Peak Hour	3A	N
	3B	N
Warrant 4 – Pedestrian Volume	4A	N
	4B	N
Warrant 5 – School Crossings		N
Warrant 6 – Coordinated Signal System		N
Warrant 7 – Crash Experience		N
Warrant 8 – Roadway Network		N
Warrant 9 – Intersection Near a Grade Crossing		N
Signal Should be Considered?		**N**

Traffic Volume Data:

Hour	Both Approach Volumes		Higher Volume Approach		Crossing Ped. Volume	
	Major	Minor	Major	Minor	Major	Minor
7:00-8:00	549	28	378	28	0	0
8:00-9:00	549	57	378	57	0	0
Noon-1:00						
2:00-3:00						
3:00-4:00						
4:00-5:00	502	28	360	28		
5:00-6:00	502	57	360	57	0	0
6:00-7:00						
AM Peak	686	35	472	35		
PM Peak	627	71	450	71		

Accident Data:

Time Frame (Mo.)	Total Number of Accidents	Property Damage/Injury Acc.	Acc. Correctable with a Traffic Signal
NA	NA	NA	NA

Applicable Signal Warrant Details:

Warrant 1, Eight-Hour Vehicular Volume

The need for a traffic control signal shall be considered if an engineering study finds that one of the following conditions exist for each of any 8 hours of an average day:
A. The vehicles per hour given in both of the 70 percent columns of Condition A in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection; or

B. The vehicles per hour given in both of the 70 percent columns of Condition B in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection.

In applying each condition, the major-street and minor-street volumes shall be for the same 8 hours. On the minor street, the higher volume shall not be required to be on the same approach during each of these 8 hours.
C. The need for a traffic control signal shall be considered if an engineering study finds that both of the following conditions exist for each of any 8 hours of an average day:

A. The vehicles per hour given in both of the 56 percent columns of Condition A in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection; and
B. The vehicles per hour given in both of the 56 percent columns of Condition B in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection.

These major-street and minor-street volumes shall be for the same 8 hours for each condition; however, the 8 hours satisfied in Condition A shall not be required to be the same 8 hours satisfied in Condition B. On the minor street, the higher volume shall not be required to be on the same approach during each of the 8 hours.

Table 4C-1. Warrant 1, Eight-Hour Vehicular Volume

Condition A—Minimum Vehicular Volume

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%[a]	80%[b]	70%[c]	56%[d]	100%[a]	80%[b]	70%[c]	56%[d]
1	1	500	400	350	280	150	120	105	84
2 or more	1	600	480	420	336	150	120	105	84
2 or more	2 or more	600	480	420	336	200	160	140	112
1	2 or more	500	400	350	280	200	160	140	112

Condition B—Interruption of Continuous Traffic

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%[a]	80%[b]	70%[c]	56%[d]	100%[a]	80%[b]	70%[c]	56%[d]
1	1	750	600	525	420	75	60	53	42
2 or more	1	900	720	630	504	75	60	53	42
2 or more	2 or more	900	720	630	504	100	80	70	56
1	2 or more	750	600	525	420	100	80	70	56

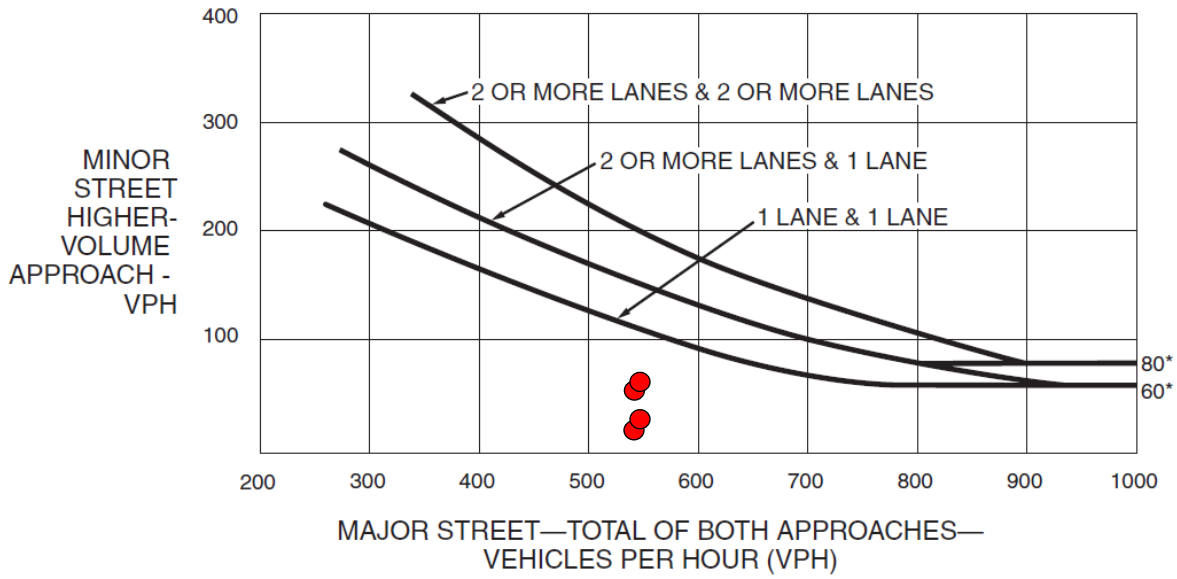
[a] Basic minimum hourly volume
[b] Used for combination of Conditions A and B after adequate trial of other remedial measures
[c] May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000
[d] May be used for combination of Conditions A and B after adequate trial of other remedial measures when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000

Warrant 2, Four-Hour Vehicular Volume

The need for a traffic control signal shall be considered if an engineering study finds that, for each of any 4 hours of an average day, the plotted points representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) all fall above the applicable curve in Figure 4C-2 for the existing combination of approach lanes. On the minor street, the higher volume shall not be required to be on the same approach during each of these 4 hours.

Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

No hours meet Warrant 2.

Warrant 3, Peak Hour

This signal warrant shall be applied only in unusual cases, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time. The need for a traffic control signal shall be considered if an engineering study finds that the criteria in either of the following two categories are met:

A. If all three of the following conditions exist for the same 1 hour (any four consecutive 15-minute periods) of an average day:
1. The total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach; and

Warrant Not Met

2. The volume on the same minor-street approach (one direction only) equals or exceeds 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes; and

Minor-street approach does not exceed 100 vehicles per hour.

3. The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for Intersections with three approaches.

The total entering volume does not exceed 650 vehicles per.

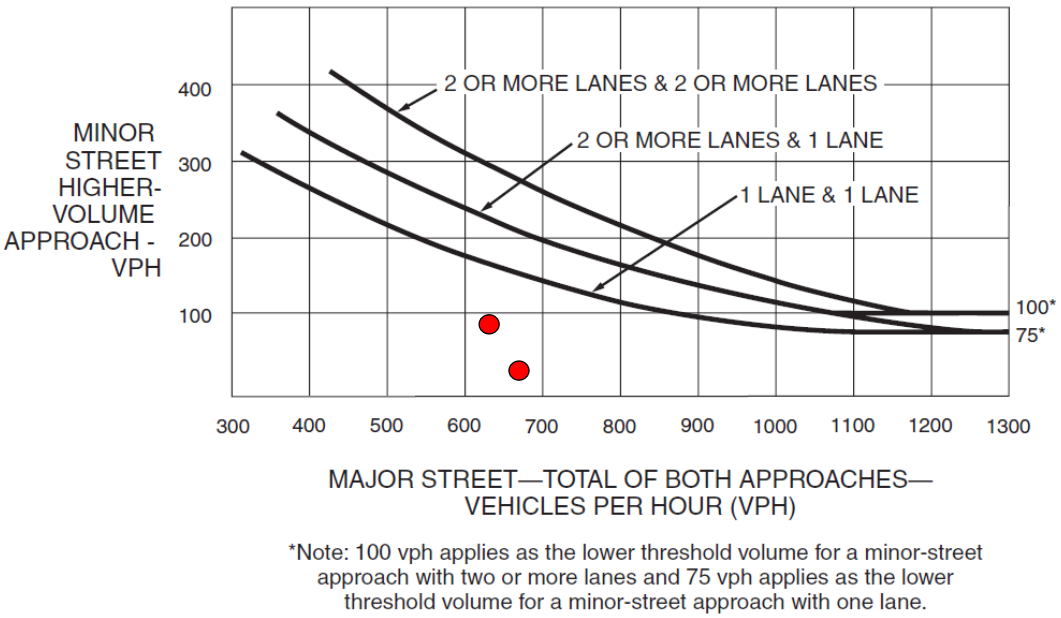
B. The plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) for 1 hour (any four consecutive 15-minute periods) of an average day falls above the applicable curve in Figure 4C-4 for the existing combination of approach lanes.

No hours meet Warrant 3B.

If this warrant is the only warrant met and a traffic control signal is justified by an engineering study, the traffic control signal may be operated in the flashing mode during the hours that the volume criteria of this warrant are not met.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Warrant 4, Pedestrian Volume

The need for a traffic control signal at an intersection or midblock crossing shall be considered if an engineering study finds that one of the following criteria is met:

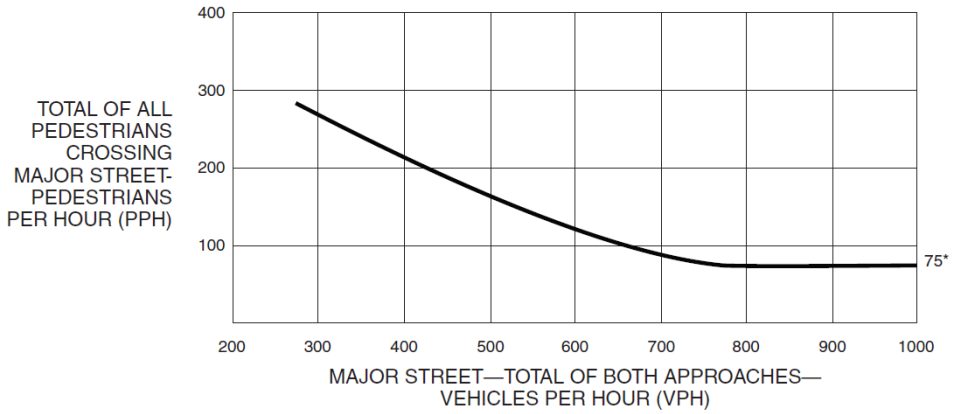
A. For each of any 4 hours of an average day, the plotted points representing the vehicles per hour on the major street (total of both approaches) and the corresponding pedestrians per hour crossing the major street (total of all crossings) all fall above the curve in Figure 4C-6; or

B. For 1 hour (any four consecutive 15-minute periods) of an average day, the plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding pedestrians per hour crossing the major street (total of all crossings) falls above the curve in Figure 4C-8.

The Pedestrian Volume signal warrant shall not be applied at locations where the distance to the nearest traffic control signal or STOP sign controlling the street that pedestrians desire to cross is less than 300 feet, unless the proposed traffic control signal will not restrict the progressive movement of traffic.

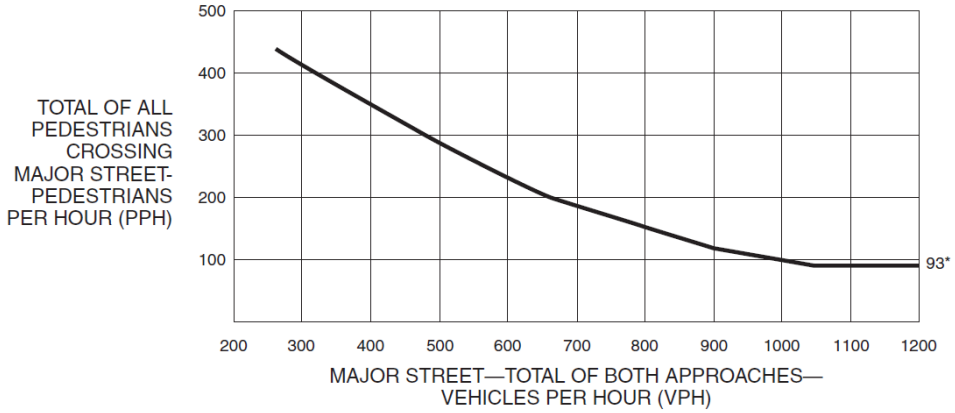
Warrant Not Met, no pedestrians were observed during the traffic counts.

Figure 4C-6. Warrant 4, Pedestrian Four-Hour Volume (70% Factor)



*Note: 75 pph applies as the lower threshold volume.

Figure 4C-8. Warrant 4, Pedestrian Peak Hour (70% Factor)



*Note: 93 pph applies as the lower threshold volume.

Warrant 5, School Crossing

The need for a traffic control signal shall be considered when an engineering study of the frequency and adequacy of gaps in the vehicular traffic stream as related to the number and size of groups of school children at an established school crossing across the major street shows that the number of adequate gaps in the traffic stream during the period when the schoolchildren are using the crossing is less than the number of minutes in the same period (see Section 7A.03) and there are a minimum of 20 schoolchildren during the highest crossing hour.

Before a decision is made to install a traffic control signal, consideration shall be given to the implementation of other remedial measures, such as warning signs and flashers, school speed zones, school crossing guards, or a grade-separated crossing.

The School Crossing signal warrant shall not be applied at locations where the distance to the nearest traffic control signal along the major street is less than 300 feet, unless the proposed traffic control signal will not restrict the progressive movement of traffic.

Warrant Not Met, No school in the vicinity of the intersection.

Warrant 6, Coordinated Signal System

The need for a traffic control signal shall be considered if an engineering study finds that one of the following criteria is met:

A. On a one-way street or a street that has traffic predominantly in one direction, the adjacent traffic control signals are so far apart that they do not provide the necessary degree of vehicular platooning. **(Not Applicable)**

B. On a two-way street, adjacent traffic control signals do not provide the necessary degree of platooning and the proposed and adjacent traffic control signals will collectively provide a progressive operation. **(Not Applicable)**

Warrant 7, Crash Experience

The need for a traffic control signal shall be considered if an engineering study finds that all of the following criteria are met:

A. Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency; and **(NOT REVIEWED)**

B. Five or more reported crashes, of types susceptible to correction by a traffic control signal, have occurred within a 12-month period, each crash involving personal injury or property damage apparently exceeding the applicable requirements for a reportable crash; and **(NOT REVIEWED)**

C. For each of any 8 hours of an average day, the vehicles per hour (vph) given in both of the 56 percent columns of Condition A in Table 4C-1 (see Section 4C.02), or the vph in both of the 56 percent columns of Condition B in Table 4C-1 exists on the major-street and the higher-volume minor-street approach, respectively, to the intersection, or the volume of pedestrian traffic is not less than 70 percent of the requirements specified in the Pedestrian Volume warrant. These major-street and minor-street volumes shall be for the same 8 hours. On the minor street, the higher volume shall not be required to be on the same approach during each of the 8 hours**. (NOT REVIEWED)**

Warrant 8, Roadway Network

The need for a traffic control signal shall be considered if an engineering study finds that the common intersection of two or more major routes meets one or both of the following criteria:

A. The intersection has a total existing, or immediately projected, entering volume of at least 1,000 vehicles per hour during the peak hour of a typical weekday and has 5-year projected traffic volumes, based on an engineering study, that meet one or more of Warrants 1, 2, and 3 during an average weekday; or **(Proposed entering volume is 721 vehicles during the AM peak hour)**

B. The intersection has a total existing or immediately projected entering volume of at least 1,000 vehicles per hour for each of any 5 hours of a non-normal business day (Saturday or Sunday). **(NOT REVIEWED)**

A major route as used in this signal warrant shall have at least one of the following characteristics:

A. It is part of the street or highway system that serves as the principal roadway network for through traffic flow.
B. It includes rural or suburban highways outside, entering, or traversing a city.
C. It appears as a major route on an official plan, such as a major street plan in an urban area traffic and transportation study.

Warrant not met based on condition A

Warrant 9, Intersection Near a Grade Crossing

The need for a traffic control signal shall be considered if an engineering study finds that both of the following criteria are met:

A. A grade crossing exists on an approach controlled by a STOP or YIELD sign and the center of the track nearest to the intersection is within 140 feet of the stop line or yield line on the approach; and **(NOT MET)**
B. During the highest traffic volume hour during which rail traffic uses the crossing, the plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the minor-street approach that crosses the track (one direction only, approaching the intersection) falls above the applicable curve in Figure 4C-9 or 4C-10 for the existing combination of approach lanes over the track and the distance D, which is the clear storage distance as defined in Section 1A.13. **(NOT MET)**

Warrant not met no railroad crossing in close proximity to the intersection.

APPENDIX J

STORMWATER REPORT

DRAINAGE DESIGN REPORT

FOR

DRAFT GENERIC ENVIRONMENTAL IMPACT STATEMENT
BEACON ISLAND EXPANSION
TOWN OF BETHLEHEM
ALBANY COUNTY
NEW YORK

MAY 2019

CREATED FOR:

PORT OF ALBANY

ALBANY PORT DISTRICT COMMISSION
106 Smith Boulevard
Albany, NY 12202
518 463-8763
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CREATED BY:

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- *B. Soil Classification*

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Appendix A – Existing Conditions Drainage Map and HydroCAD Report

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Appendix C – Water Quality and Runoff Reduction Volume Calculations

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I. General Information

A. Project Description

This Stormwater Management Report has been developed for a Draft Generic Environmental Impact Report (DGEIS) for a proposed development at the Port of Albany. The proposed development is an industrial park on 81.62 acres of land at the Beacon Island site, located at the confluence of the Normans Kill and Hudson River. The property owner, Albany Port District Commission (APDC), is proposing to develop a vacant parcel of land (tax parcels 98.00-2-10.23 and 98.01-2-1.0) to expand the existing Port of Albany that will contain a maximum of 1.13 million square feet of industrial use in the Town of Bethlehem, Albany County, New York, collectively to be known as the Albany Port District Commission Port of Albany Expansion. The project is generic in nature with no specific tenant(s) identified, therefore the stormwater impacts of an industrial park concept including a 1,130,000 square foot warehouse, distribution center, and typical industrial uses has been analyzed. The project will also include an access road through the site connecting to South Port Street in the north and to River Road/Route 144 in the south; the existing railroad adjacent South Port Street will be extended south into the site; two bridges over the Normans Kill will be added, one for the access road and one for the railway; and finally a wharf will be added along the Hudson River for maritime use.

The purpose of this report is to assess the stormwater quality, quantity, and erosion and sediment control for the development of the site. This report has been developed in accordance with the New York State Department of Environmental Conservation (NYSDEC) State Pollution Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity, GP-0-15-002 (Permit) and the NYSDEC Stormwater Management Design Manual (The Manual). The project site is located within the Town of Bethlehem, Albany County, New York, which is an MS4 community, requiring this report and project to receive approval from the Town of Bethlehem.

B. Soil Classification

According to the Natural Resources Conservation Service (NRCS) web soil survey, there are four (4) mapped soil units identified within the project boundary (see Appendix D). The majority of the soil falls within the hydrologic soil group B/D. The first letter corresponds to drained soil's properties under drained conditions and the second to saturated conditions. Group B soils have moderate infiltration and runoff rates while group D have a low infiltration rate and a high runoff rate. The soils with dual group identifiers have been modeled with the more conservative of the two, in this case a D soils group.

The complete list of soils found on the project site is identified in the table below (see Appendix D for NRCS Soils Report).

Table I – Soils Summary

Symbol	Soil Name	Hydrologic Soil Group
NrD	Nassau very channery silt loam, hilly, very rocky	D
Ug	Udorthents, loamy	A
Ur	Urban land	
Wo	Wayland soils complex, non-calcareous substratum, 0 to 3 percent slopes, frequently flooded	B/D

II. Hydrology

A. Existing Conditions

The existing drainage area is comprised of a total of 81.62 +/- acres, bordered by the Normans Kill to the north and the Hudson River to the east. At the south boundary there is a Public Service Energy Group (PSEG) power plant, and to the west a parcel owned by Niagara Mohawk Power Corporation that conveys overhead electric transmission lines as well as an underground gas main. The site consists primarily of brush and trees with a small gravel area as well as abandoned railroad tracks. The existing pervious area is 78.02 +/- acres, and the existing impervious area is 3.60 +/- acres. Runoff from the site travels via sheet and shallow concentrated flow directly to the Normans Kill and Hudson River. There are four delineated wetlands within the affected drainage area. Wetland 1 (1.26 acres) is a freshwater emergent and forested wetland located in the northwest portion of the property and functions as storage during flooding events. Wetland 3 (0.07 acres) and Wetland 4 (0.003 acres) are both located on the bank of the Hudson River and are freshwater tidal wetlands. Wetland 9 (0.04 acres) is located on the north side of the Normans Kill and is a freshwater emergent wetland. See Appendix A for existing conditions plans and watershed mapping.

The existing site falls within the Normans Kill watershed of the Middle Hudson Sub-Basin for the Lower Hudson River Basin (HUC10: 0202000602, Water Index No H-221-4) which is listed as a Class C water. Neither the Normans Kill nor the Hudson River are listed in the Manual's Appendix C as a watershed where enhanced phosphorus removal standards are required. Additionally, neither are listed in the Manual's Appendix E as a watershed impaired by pollutants related to construction activity.

B. Proposed Conditions

The proposed development is a 1,130,000 square foot warehouse with ancillary impervious areas including parking for automobiles and trucks, a roadway, railroad, and a maritime wharf. There will also be pervious areas of grass and unaltered brush and trees. The site will

consist of approximately 49.63 acres of impervious cover and approximately 31.99 acres of pervious cover.

Runoff from the proposed impervious areas will travel via sheet and shallow concentrated flow to one of five closed drainage systems with an outlet into either a bioretention facility or a water quality pond. The bioretention/water quality ponds will provide runoff reduction and water quality volume to treat the water prior to being discharged into the Normans Kill and/or Hudson River. The overall drainage plan incorporates multiple separate systems with outlets to the Normans Kill and/or Hudson River to avoid a more concentrated larger outlet for the site. See Appendix B for proposed conditions plans and watershed mapping.

The proposed drainage condition is split up into four drainage areas that can be compared with the four drainage areas from the existing condition. However, drainage area 3 is split up into four subareas, P3A, P3B, P3C, and P3D. Each of these subareas drain into the Hudson River and area analyzed in the same design point. See Appendix B for the Proposed Conditions Drainage Map.

III. Stormwater Management & SPDES Requirements

Since the subject site will have land disturbance of more than 1-acre, a full SPDES permit will be required as part of the project. A Stormwater Pollution Prevention Plan (SWPPP) will be developed in accordance with the Permit regulations. The SWPPP will be prepared in compliance with the Manual and meet the following criteria as the principle objectives contained in an approved SWPPP.

- Reduction or elimination of erosion and sediment loading to water-bodies during construction activities. Controls will be designed in accordance with the NYSDEC's New York State Standards and Specifications for Erosion and Sediment Control.
- Mitigate the impact of stormwater runoff on the water quality of the receiving waters.
- Mitigate the increased peak runoff rate of runoff during and after construction.
- Maintenance of stormwater controls during and after completion of construction.

These objectives will be accomplished by incorporating design criteria outlined within the Technical Guidelines provided by The Manual and summarized below.

A. Methodology

To analyze the hydrologic impacts of the proposed development, a storm water management model was developed in accordance with the Manual. HydroCAD™, by HydroCAD Software Solutions LLC was used to model both the existing and proposed conditions: soil data from the NRCS Web Soil Survey was entered into the software; land coverage areas were estimated using aerial photography and site visits; watershed areas were developed using the surveyed topography; time of concentrations were estimated using USDA, Urban Hydrology for Small

Watersheds, TR-55 (TR-55) methodology; and finally runoff and routing calculations were performed using the SCS Unit Hydrograph method.

Green Infrastructure practices were designed in accordance with the Manual using the NYSDEC Runoff Reduction Worksheets available through the NYSDEC's Construction Stormwater Toolbox, available on their website.

The following general steps are followed when conducting a stormwater design:

1. Site Planning:
   The existing natural resource areas and drainage patterns including wetlands, waterways, floodplains, and soils are identified. Conservation of natural resources are maximized given the proposed site.
2. Pre and Post-Development Conditions Analysis:
   The pre and post-development stormwater runoff conditions for the 1, 10, and 100-year storm events are determined using HydroCAD (detailed HydroCAD reports for this project can be found in Appendices A and B).
3. Water Quality:
   The Water Quality Volume and Runoff Reduction Volume are calculated using Chapter 4 of the Manual and Green Infrastructure Worksheets (provided in Appendix C).
4. Water Quantity:
   Peak runoff and stormwater retention/detention are evaluated using the Manual.

B. Water Quality Volume (WQv) / Runoff Reduction Volume (RRv)

Section 4.2 of the Manual states that Water Quality Volume (WQv) is intended to improve the water quality by capturing and treating runoff from small, frequent storm events that contain higher pollutant levels created through the increase of impervious surfaces. Impervious surfaces accumulate pollutants that quickly wash off and rapidly enter downstream waters as well as prevent natural groundwater recharge.

The WQv required for the proposed site is based upon the 90% rainfall event number, percent of impervious cover, and the total site area. Calculations were done using the Green Infrastructure worksheets and can be found in Appendix C. The total WQv required is 208,176 cubic feet.

Runoff Reduction Volume (RRv) is the reduction of the total WQv by application of green infrastructure techniques and stormwater management practices to more closely replicate pre-development hydrology. The intent of RRv is to recognize the water quality benefits of certain site design practices to address flow as a pollutant of concern.

According to Section 4.3 of the Manual, RRv may be calculated based on three methods:

1. Reduction of the practice contributing area in WQv
2. Reduction of runoff volume by storage capacity of the practice

3. Reduction using standard SMPs with runoff reduction capacity

The minimum RRv required by the proposed site is based on the total area of new impervious cover and the Hydrologic Soil Group (HSG) Specific Reduction Factor (S). The specific reduction factor is based on the HSGs present at the existing site. Calculations were done using the Green Infrastructure worksheets and can be found in Appendix C. The minimum RRv was determined to be 41,076 cubic feet.

To best suit the stormwater requirements of the proposed site, three bioretention basins and two stormwater ponds were designed. The bioretention basin was sized in accordance with Section 6.4, Stormwater Filtering Systems of the Manual; because the majority of the native soils of the site are of NRCS soil group D, an underdrain has been included in the design. The ponds were designed in accordance with Section 6.1, Stormwater Ponds, of the Manual. The ponds were sized to provide WQv. However, the ponds do not provide any storm event flow mitigation (see section III.C through III.E below). Bioretention basins and stormwater ponds will be designed in full detail using the Manual. The RRv and WQv that each of these SMPs provide is summarized in Table II below:

Table II – Stormwater Management Practice Summary

SMP	RRv	WQv	Total
Pond 1	-	25,000	25,000
Pond 2	-	100,425	100,425
Bioretention Basin 1	12,910	12,033	24,943
Bioretention Basin 2	14,054	17,137	31,191
Bioretention Basin 3	14,256	20,128	34,384
Totals	**41,220**	174,723	**215,943**
Required	41,076	-	208,176

C. Channel Protection Volume (CPv)

Stream Channel Protection Volume Requirements (CPv) are designed to protect stream channels from erosion. The Manual was used to determine the water quantity requirements of CPv; specifically, providing 24-hour extended detention for the 1-year storm event or discharging directly to tidal waters.

According to Section 4.4, Stream Channel Protection Volume Requirements (CPv) of the Manual the CPv requirement does not apply when the site discharges to a tidal waterbody.

The Cpv requirement does not apply in certain conditions, including the following:

- Reduction of the entire Cpv volume is achieved at a site through green infrastructure or infiltration systems.
- The site discharges directly tidal waters or fifth order (fifth downstream) or larger streams.

The Hudson River and Normans kill are tidal at the project site. Therefore, the project site discharges directly to tidal waters in both the existing and proposed conditions and 24-hour extended detention of the 1-year storm event is not required for this project.

The change in hydrology for the 1-year storm event from existing to proposed is shown in the HydroCAD Report printouts provided in Appendix B for reference.

D. Overbank Flood Control (Qp)

The primary purpose of the overbank flood control sizing criterion is to prevent an increase in the frequency and magnitude of out-of-bank flooding generated by urban development. The Manual was used to determine the water quantity requirements of Qp; specifically, providing sufficient retention volume to discharge all runoff from the proposed 10-year storm event at a rate equal to or less than the existing peak 10-year runoff rate or discharging directly to tidal waters.

According to Section 4.5, Overbank Flood Control Criteria (Qp) of the Manual the Qp requirement does not apply when the site discharges to a tidal waterbody.

> The overbank flood control requirement (Qp) does not apply in certain conditions, including:
>
> - The site discharges directly tidal waters or fifth order (fifth downstream) or larger streams. Refer to Section 4.3 for instructions.

The Hudson River and Normans kill are tidal at the project site. Therefore, the project site discharges directly to tidal waters in both the existing and proposed conditions and retention of the 10-year storm event is not required for this project.

The change in hydrology for the 10-year storm event from existing to proposed is shown in the HydroCAD Report printouts provided in Appendix B for reference.

E. Extreme Flood Control (Qf)

The intent of the extreme flood criteria is to prevent the increased risk of flood damage from large storm events, maintain the boundaries of the predevelopment 100-year floodplain, and protect the physical integrity of stormwater management practices. The Manual was used to determine the water quantity requirements of Qf; specifically, providing sufficient retention volume to discharge all runoff from the proposed 100-year storm event at a rate equal to or less than the existing peak 100-year runoff rate or discharging directly to tidal waters.

According to Section 4.6, Extreme Flood Control Criteria (Qf) the Manual the Qf requirement does not apply when the site discharges to a tidal waterbody.

The 100-year storm control requirement can be waived if:

- The site discharges directly tidal waters or fifth order (fifth downstream) or larger streams. Refer to Section 4.3 for instructions.

The Hudson River and Normans kill are tidal at the project site. Therefore, the project site discharges directly to tidal waters in both the existing and proposed conditions and retention of the 100-year storm event is not required for this project.

The change in hydrology for the 100-year storm event from existing to proposed is shown in the HydroCAD Report printouts provided in Appendix B for reference.

IV. Summary of Findings

A. Summary of Results

Table II (reiterated below from Section III,B) lists the required and provided RRv and WQv for the project. As shown the project is capable of meeting the required volumes using standard practices from the Manual.

Table II – Stormwater Management Practice Summary

SMP	RRv	WQv	Total
Pond 1	-	25,000	25,000
Pond 2	-	100,425	100,425
Bioretention Basin 1	12,910	12,033	24,943
Bioretention Basin 2	14,054	17,137	31,191
Bioretention Basin 3	14,256	20,128	34,384
Totals	**41,220**	174,723	**215,943**
Required	41,076	-	208,176

Tables III and IV below depict the peak discharge in the existing and proposed conditions for 10-year and 100-year design storms. The peak discharge for both storm events exceeds the existing value; however, as described in Sections III,C through E above, this requirement does not apply to this project and these values are shown for reference only.

Table III – Peak Discharge for 10-Year Design Storm

Drainage Area	10-Year Design Storm Discharge (cfs)	
	Existing	Proposed
1	10.23	5.70
2	21.02	13.92
3	17.27	195.21
4	11.19	135.45
Total	**59.71**	**350.28**

Table IV – Peak Discharge for 100-Year Design Storm

Drainage Area	100-Year Design Storm Discharge (cfs)	
	Existing	Proposed
1	23.56	12.55
2	48.31	30.95
3	40.08	350.59
4	26.06	239.90
Total	**138.01**	**633.99**

B. Conclusion

Based upon the analysis provided in this report, the proposed development can meet all of the requirements of the Manual and the Permit. During construction activities Erosion and Sediment Control will be designed and enforced in accordance with the NYSDEC New York State Standards and Specifications for Erosion and Sediment Control. Standard stormwater management practices can provide the required RRv and WQv for the proposed conditions. The elements of the Manual and the Permit that relate to stormwater quantity controls, specifically CPv, Qp, and Qf, are not required at this site as the site discharges directly to a tidal water. All elements of the closed drainage system will be designed to be non-erosive during a 2-year storm event and capable of conveying a 10-year storm event. After construction, a maintenance and operation report program and agreement will be made between the site operator and town to ensure all stormwater management practices are maintained over the life of the site's operations. Example maintenance checklists have been provided in Appendix E.

Appendix A

Existing Conditions Drainage Map and HydroCAD Report

PRE-DEVELOPMENT WATERSHEDS:

AREA 1:
1.60 ACRES IMPERVIOUS
20.75 ACRES PERVIOUS

AREA 2:
2.00 ACRES IMPERVIOUS
28.25 ACRES PERVIOUS

AREA 3:
10.41 ACRES PERVIOUS

AREA 4:
8.51 ACRES PERVIOUS



0 150 300 450 FT
SCALE

McFarland Johnson
60 RAILROAD PLACE
SUITE 402
SARATOGA SPRINGS, NEW YORK 12866
P:518-580-9380 F:518-580-9383
mjinc.com

PROJECT MILESTONE
CONCEPT SITE PLAN

NO.	DATE	DESCRIPTION

CLIENT:
ALBANY PORT DISTRICT COMMISSION

BETHLEHEM, NEW YORK

PROJECT:
PORT OF ALBANY EXPANSION

DRAWN	NSO
DESIGNED	NSO
CHECKED	--
SCALE	1"=150'
DATE	MAY 2019
PROJECT	18437.00

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECT DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

DRAWING TITLE
EXISTING DRAINAGE CONDITIONS

DRAWING NUMBER
D-01

---- OF ----

Summary for Subcatchment 1S: EX 1

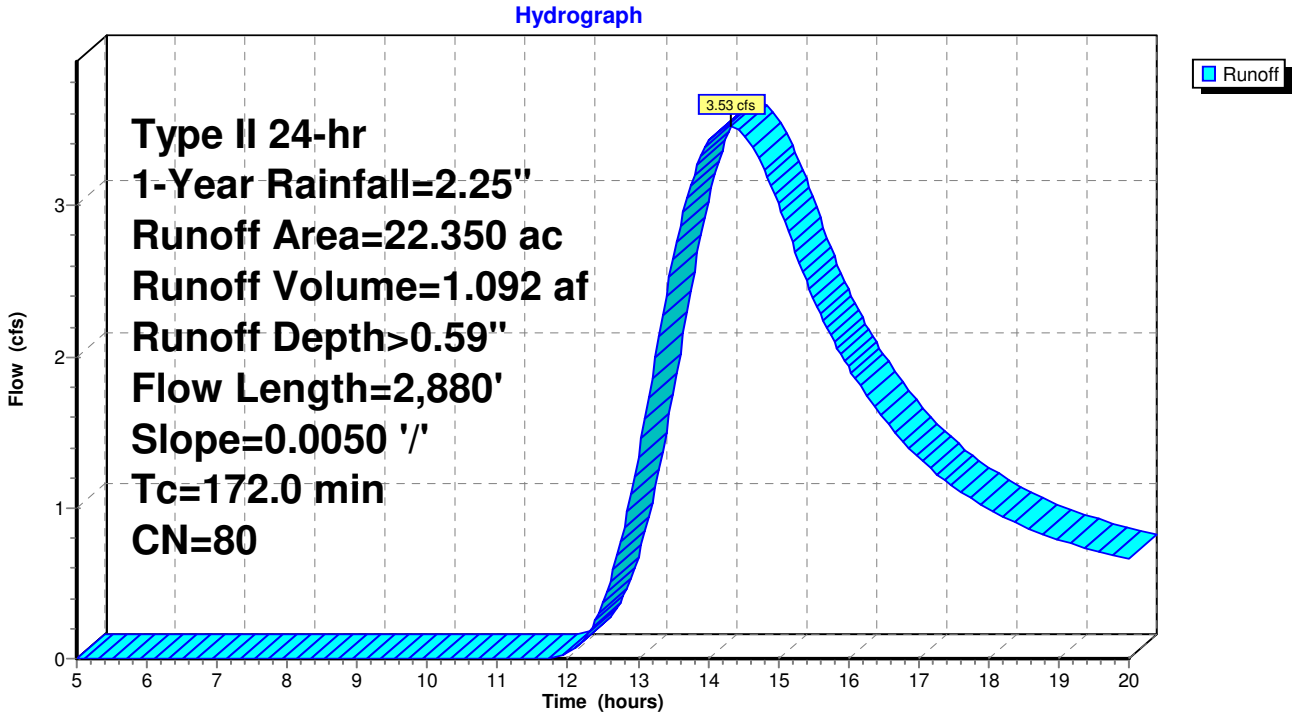
Runoff = 3.53 cfs @ 14.32 hrs, Volume= 1.092 af, Depth> 0.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-Year Rainfall=2.25"

	Area (ac)	CN	Description
	20.750	79	Woods, Fair, HSG D
*	1.600	98	Railroad
	22.350	80	Weighted Average
	20.750		92.84% Pervious Area
	1.600		7.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
40.9	100	0.0050	0.04		**Sheet Flow, Sheet - Woods** Woods: Light underbrush n= 0.400 P2= 2.67"
131.1	2,780	0.0050	0.35		**Shallow Concentrated Flow, Shallow** Woodland Kv= 5.0 fps
172.0	2,880	Total			

Subcatchment 1S: EX 1



Summary for Subcatchment 2S: EX 2

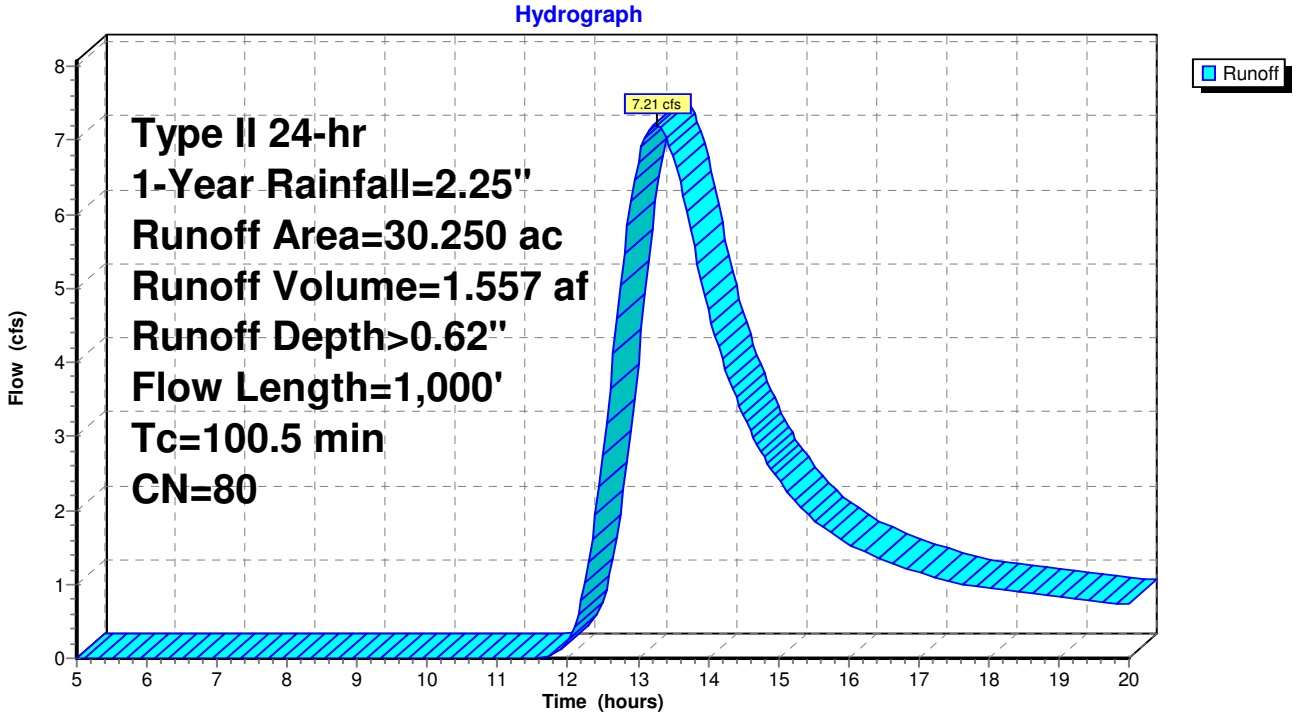
Runoff = 7.21 cfs @ 13.27 hrs, Volume= 1.557 af, Depth> 0.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-Year Rainfall=2.25"

Area (ac)	CN	Description
28.250	79	Woods, Fair, HSG D
2.000	96	Gravel surface, HSG D
30.250	80	Weighted Average
30.250		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
33.4	100	0.0030	0.05		**Sheet Flow, Sheet** Grass: Dense n= 0.240 P2= 2.67"
67.1	900	0.0020	0.22		**Shallow Concentrated Flow, Shallow** Woodland Kv= 5.0 fps
100.5	1,000	Total			

Subcatchment 2S: EX 2



Summary for Subcatchment 3S: EX 3

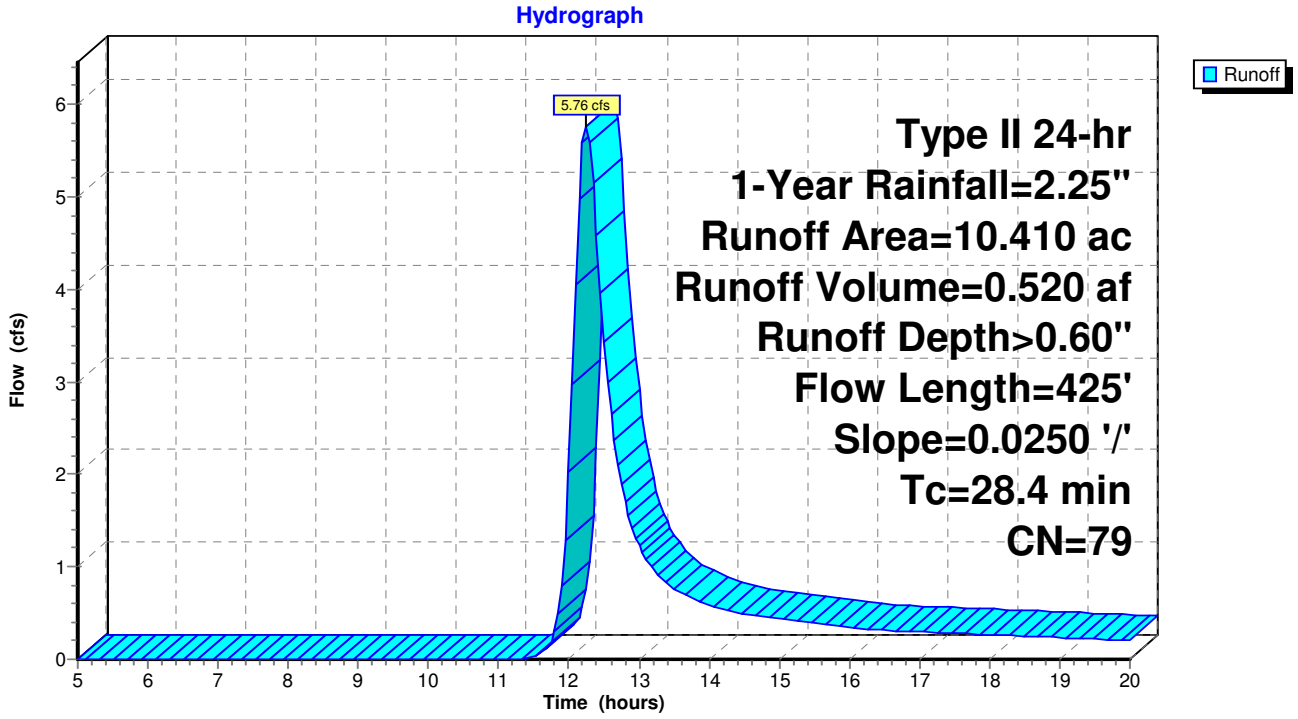
Runoff = 5.76 cfs @ 12.25 hrs, Volume= 0.520 af, Depth> 0.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-Year Rainfall=2.25"

Area (ac)	CN	Description
10.410	79	Woods, Fair, HSG D
10.410		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.5	100	0.0250	0.08		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 2.67"
6.9	325	0.0250	0.79		**Shallow Concentrated Flow, Shallow** Woodland Kv= 5.0 fps
28.4	425	Total			

Subcatchment 3S: EX 3



Summary for Subcatchment 4S: EX 4

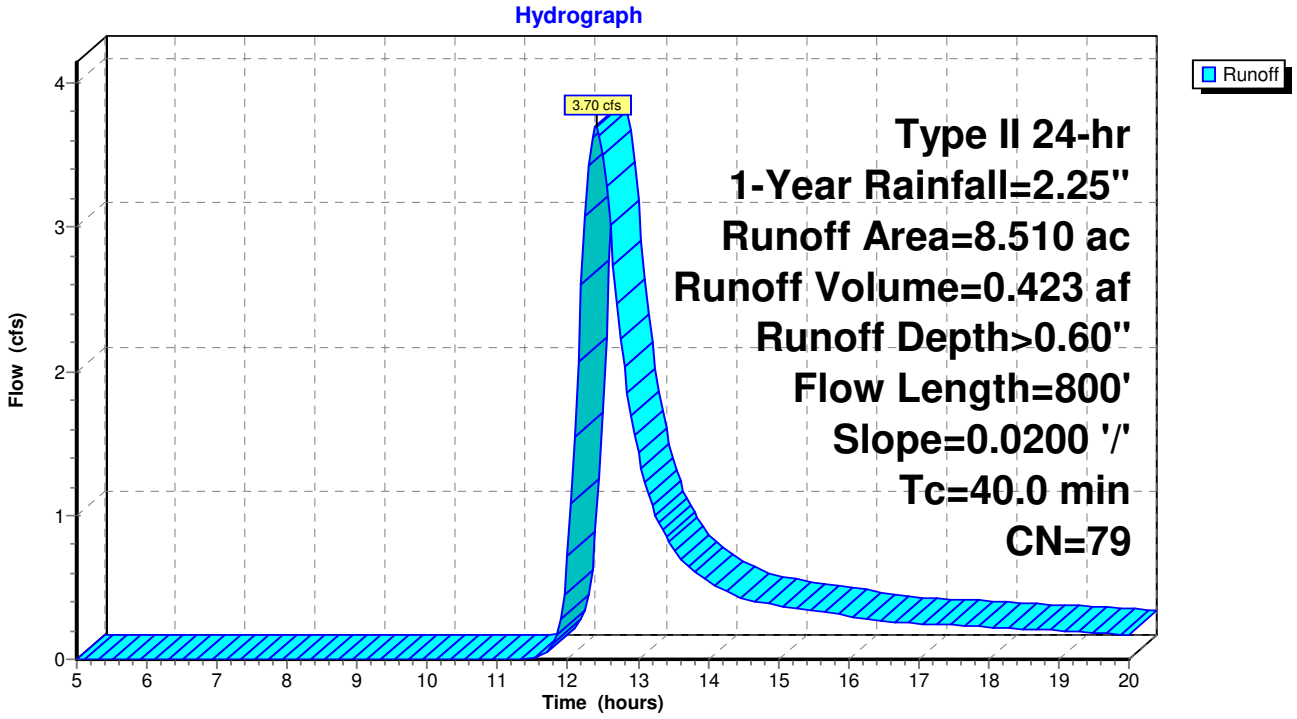
Runoff = 3.70 cfs @ 12.40 hrs, Volume= 0.423 af, Depth> 0.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-Year Rainfall=2.25"

Area (ac)	CN	Description
8.510	79	Woods, Fair, HSG D
8.510		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.5	100	0.0200	0.07		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 2.67"
16.5	700	0.0200	0.71		**Shallow Concentrated Flow, Shallow** Woodland Kv= 5.0 fps
40.0	800	Total			

Subcatchment 4S: EX 4



Summary for Subcatchment 1S: EX 1

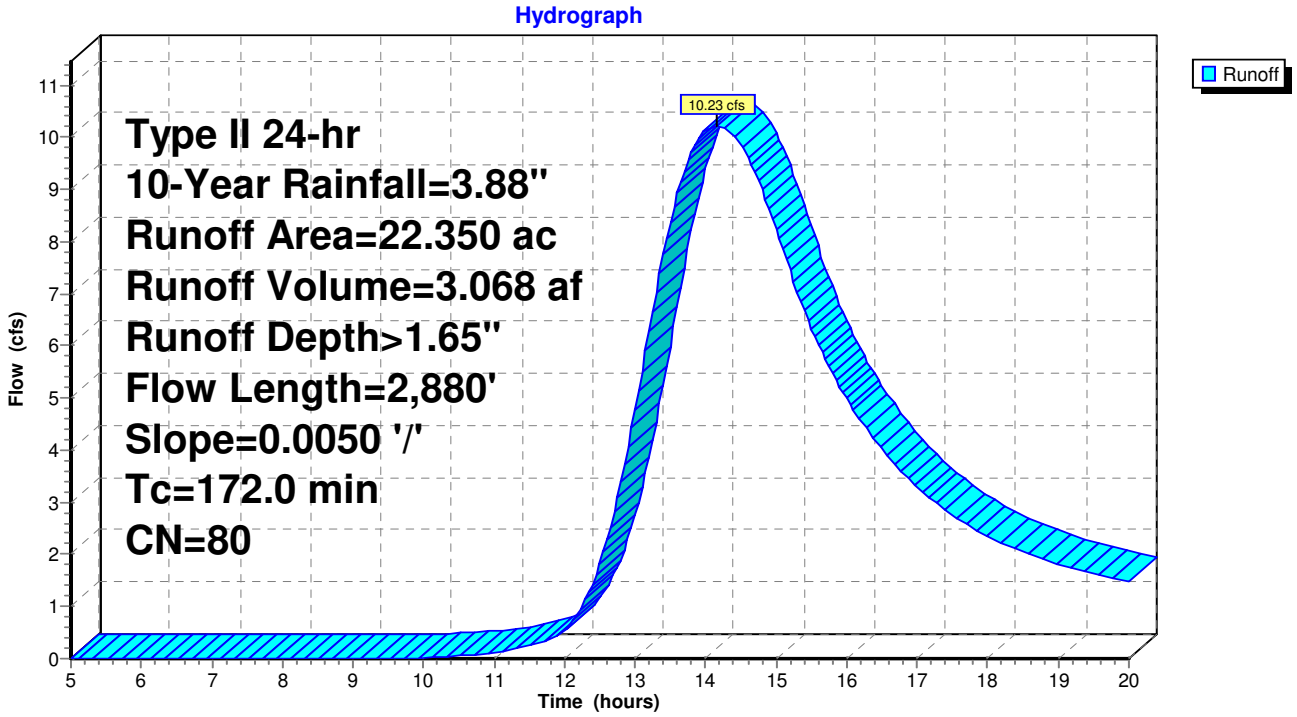
Runoff = 10.23 cfs @ 14.16 hrs, Volume= 3.068 af, Depth> 1.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-Year Rainfall=3.88"

	Area (ac)	CN	Description
	20.750	79	Woods, Fair, HSG D
*	1.600	98	Railroad
	22.350	80	Weighted Average
	20.750		92.84% Pervious Area
	1.600		7.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
40.9	100	0.0050	0.04		**Sheet Flow, Sheet - Woods** Woods: Light underbrush n= 0.400 P2= 2.67"
131.1	2,780	0.0050	0.35		**Shallow Concentrated Flow, Shallow** Woodland Kv= 5.0 fps
172.0	2,880	Total			

Subcatchment 1S: EX 1



Summary for Subcatchment 2S: EX 2

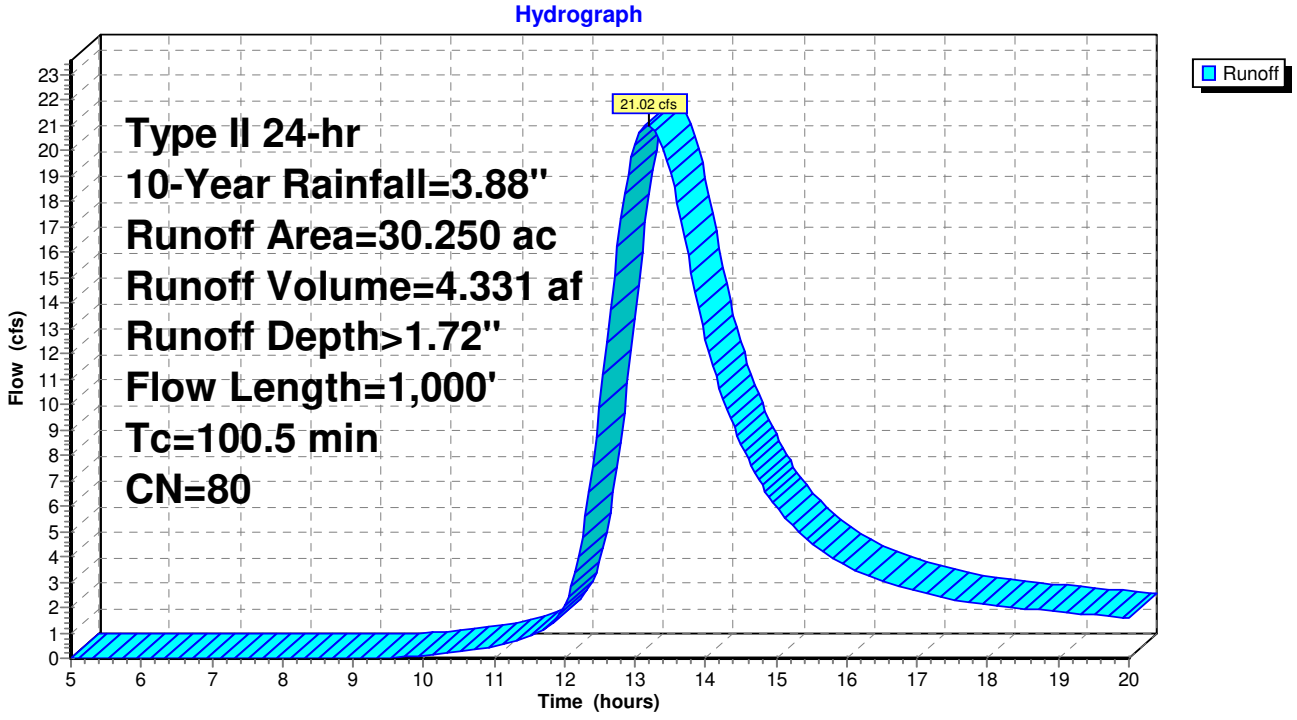
Runoff = 21.02 cfs @ 13.19 hrs, Volume= 4.331 af, Depth> 1.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-Year Rainfall=3.88"

Area (ac)	CN	Description
28.250	79	Woods, Fair, HSG D
2.000	96	Gravel surface, HSG D
30.250	80	Weighted Average
30.250		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
33.4	100	0.0030	0.05		**Sheet Flow, Sheet** Grass: Dense n= 0.240 P2= 2.67"
67.1	900	0.0020	0.22		**Shallow Concentrated Flow, Shallow** Woodland Kv= 5.0 fps
100.5	1,000	Total			

Subcatchment 2S: EX 2



Summary for Subcatchment 3S: EX 3

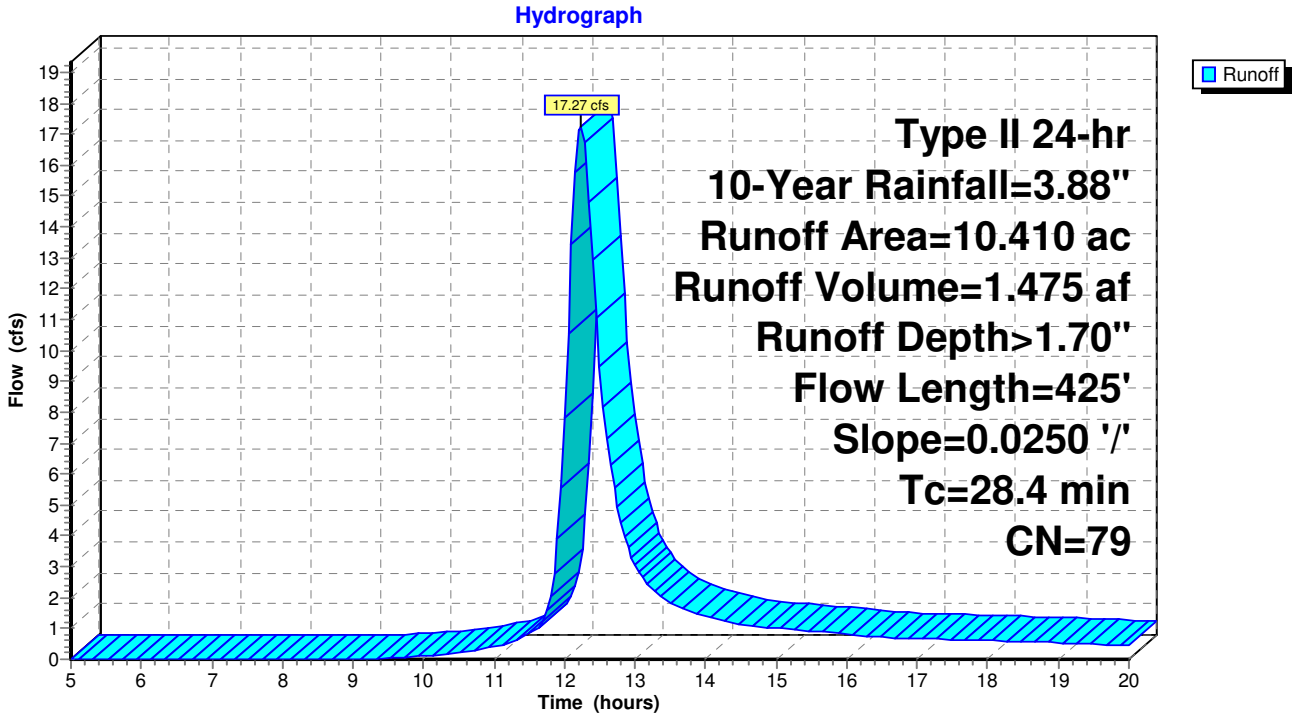
Runoff = 17.27 cfs @ 12.23 hrs, Volume= 1.475 af, Depth> 1.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-Year Rainfall=3.88"

Area (ac)	CN	Description
10.410	79	Woods, Fair, HSG D
10.410		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.5	100	0.0250	0.08		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 2.67"
6.9	325	0.0250	0.79		**Shallow Concentrated Flow, Shallow** Woodland Kv= 5.0 fps
28.4	425	Total			

Subcatchment 3S: EX 3



Summary for Subcatchment 4S: EX 4

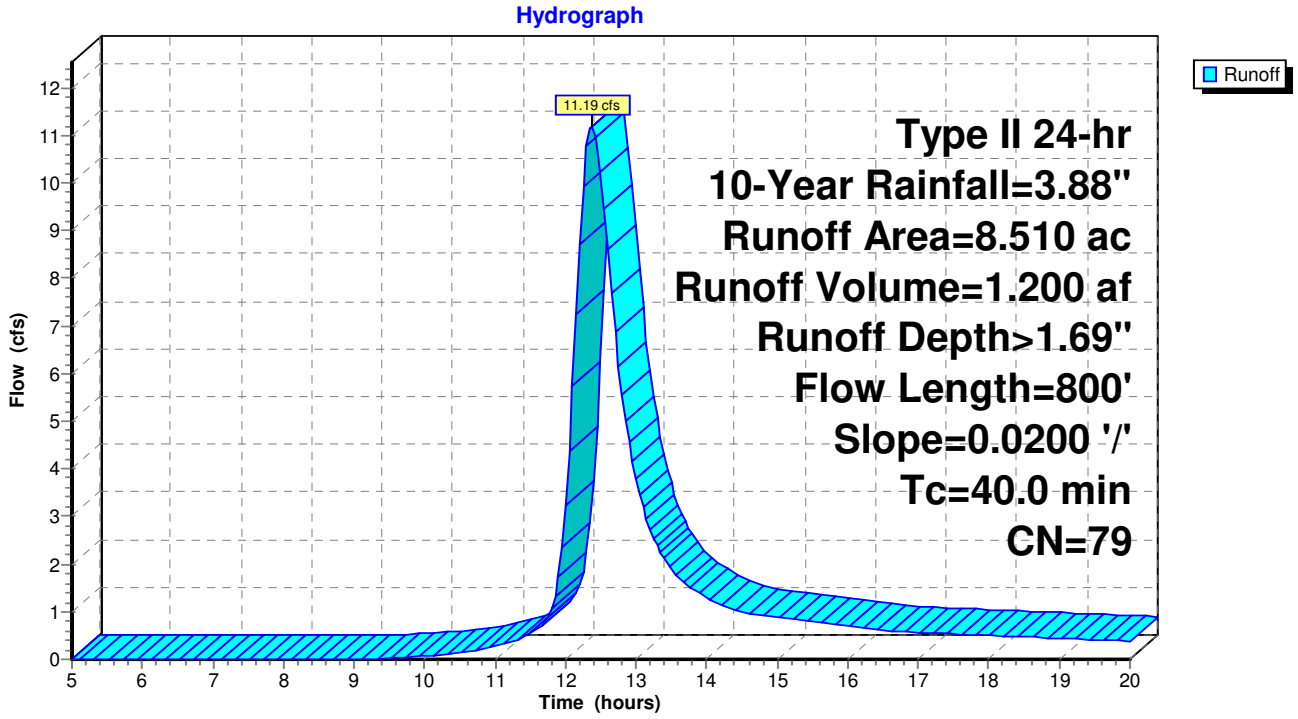
Runoff = 11.19 cfs @ 12.38 hrs, Volume= 1.200 af, Depth> 1.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-Year Rainfall=3.88"

Area (ac)	CN	Description
8.510	79	Woods, Fair, HSG D
8.510		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.5	100	0.0200	0.07		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 2.67"
16.5	700	0.0200	0.71		**Shallow Concentrated Flow, Shallow** Woodland Kv= 5.0 fps
40.0	800	Total			

Subcatchment 4S: EX 4



Summary for Subcatchment 1S: EX 1

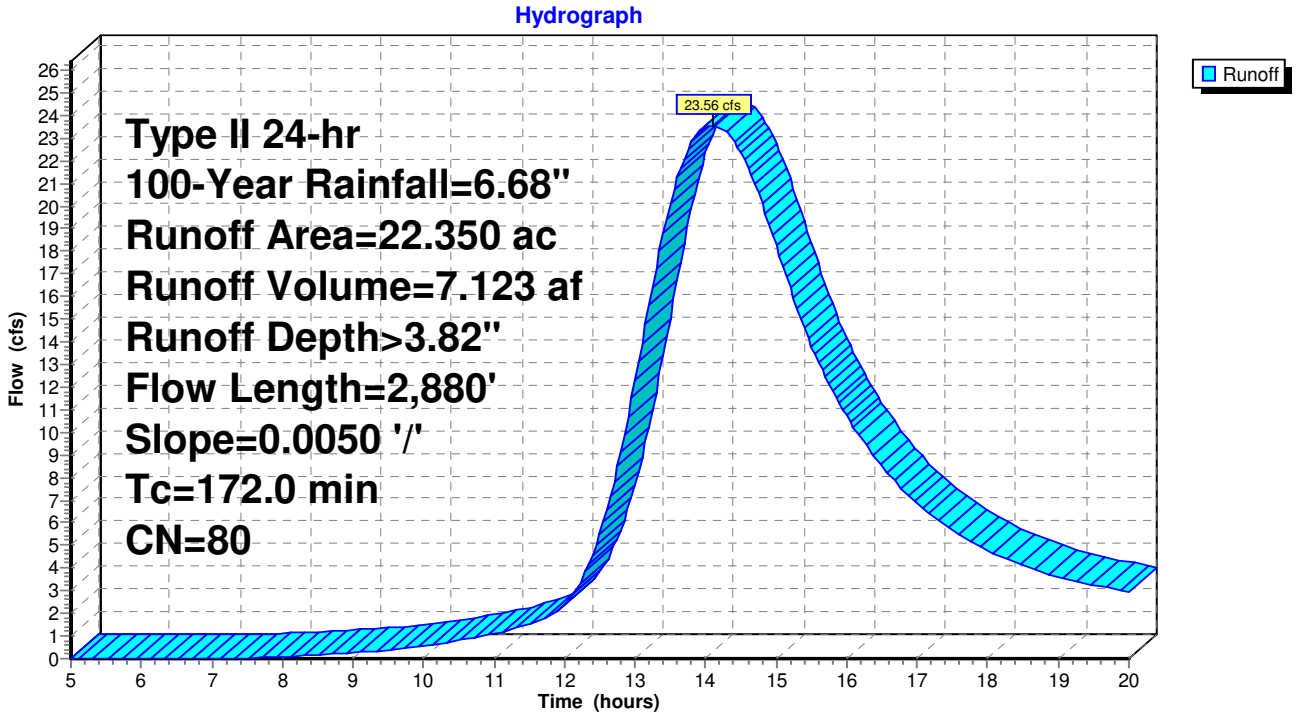
Runoff = 23.56 cfs @ 14.10 hrs, Volume= 7.123 af, Depth> 3.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-Year Rainfall=6.68"

	Area (ac)	CN	Description
	20.750	79	Woods, Fair, HSG D
*	1.600	98	Railroad
	22.350	80	Weighted Average
	20.750		92.84% Pervious Area
	1.600		7.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
40.9	100	0.0050	0.04		**Sheet Flow, Sheet - Woods** Woods: Light underbrush n= 0.400 P2= 2.67"
131.1	2,780	0.0050	0.35		**Shallow Concentrated Flow, Shallow** Woodland Kv= 5.0 fps
172.0	2,880	Total			

Subcatchment 1S: EX 1



Summary for Subcatchment 2S: EX 2

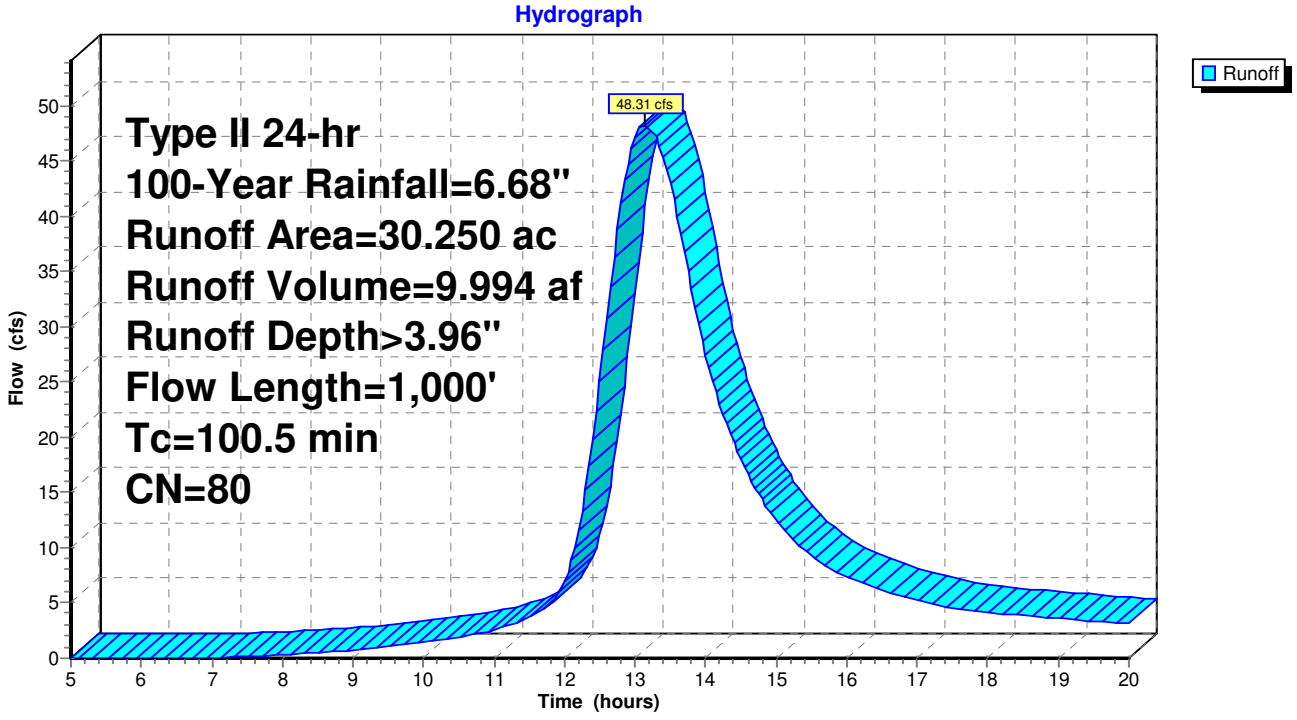
Runoff = 48.31 cfs @ 13.13 hrs, Volume= 9.994 af, Depth> 3.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-Year Rainfall=6.68"

Area (ac)	CN	Description
28.250	79	Woods, Fair, HSG D
2.000	96	Gravel surface, HSG D
30.250	80	Weighted Average
30.250		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
33.4	100	0.0030	0.05		**Sheet Flow, Sheet** Grass: Dense n= 0.240 P2= 2.67"
67.1	900	0.0020	0.22		**Shallow Concentrated Flow, Shallow** Woodland Kv= 5.0 fps
100.5	1,000	Total			

Subcatchment 2S: EX 2



Summary for Subcatchment 3S: EX 3

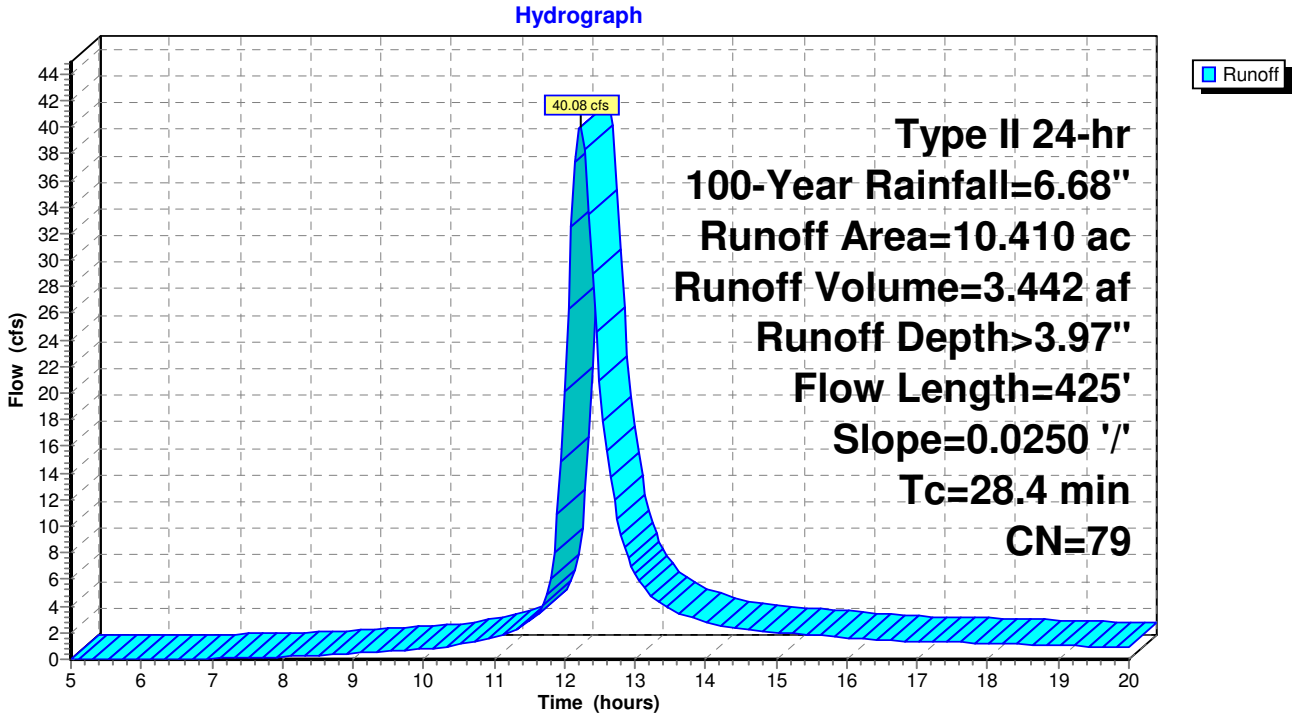
Runoff = 40.08 cfs @ 12.22 hrs, Volume= 3.442 af, Depth> 3.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-Year Rainfall=6.68"

Area (ac)	CN	Description
10.410	79	Woods, Fair, HSG D
10.410		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.5	100	0.0250	0.08		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 2.67"
6.9	325	0.0250	0.79		**Shallow Concentrated Flow, Shallow** Woodland Kv= 5.0 fps
28.4	425	Total			

Subcatchment 3S: EX 3



Summary for Subcatchment 4S: EX 4

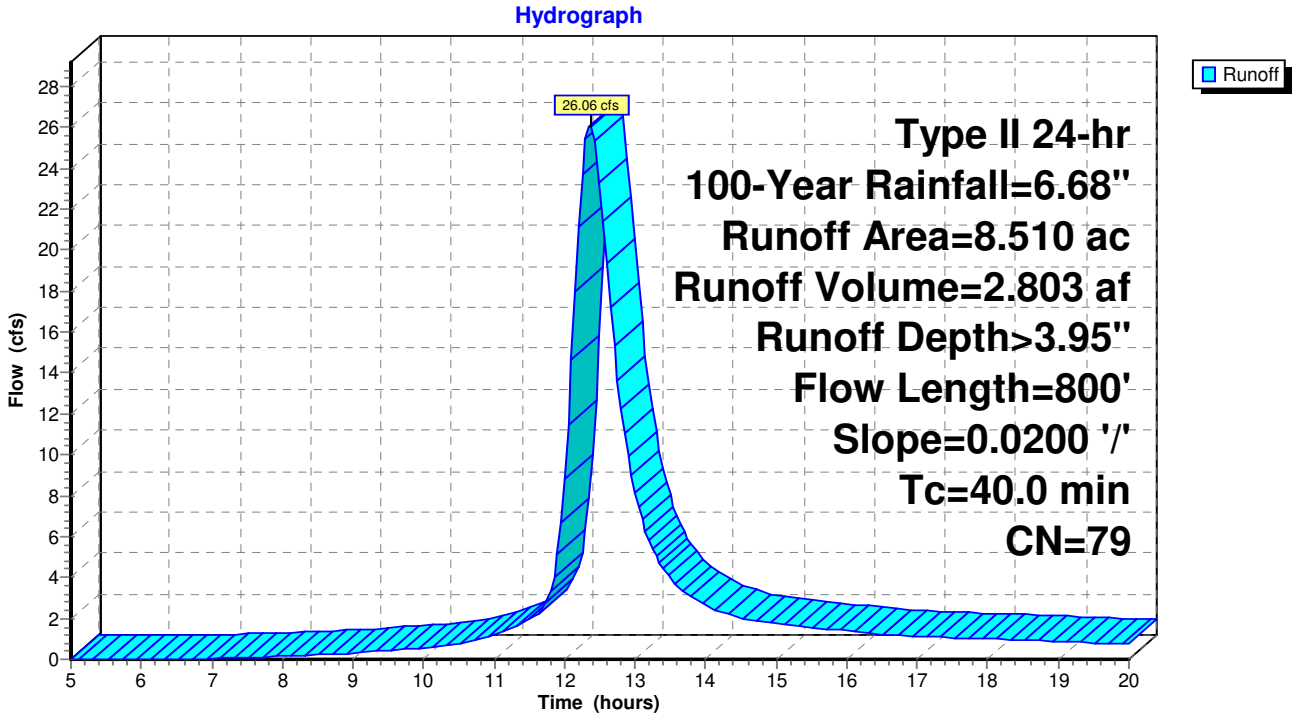
Runoff = 26.06 cfs @ 12.36 hrs, Volume= 2.803 af, Depth> 3.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-Year Rainfall=6.68"

Area (ac)	CN	Description
8.510	79	Woods, Fair, HSG D
8.510		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.5	100	0.0200	0.07		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 2.67"
16.5	700	0.0200	0.71		**Shallow Concentrated Flow, Shallow** Woodland Kv= 5.0 fps
40.0	800	Total			

Subcatchment 4S: EX 4



Appendix B

Proposed Conditions Drainage Map and HydroCAD Report

POST-DEVELOPMENT WATERSHEDS:

AREA P1:
5.11 ACRES PERVIOUS

AREA P2:
3.87 ACRES PERVIOUS

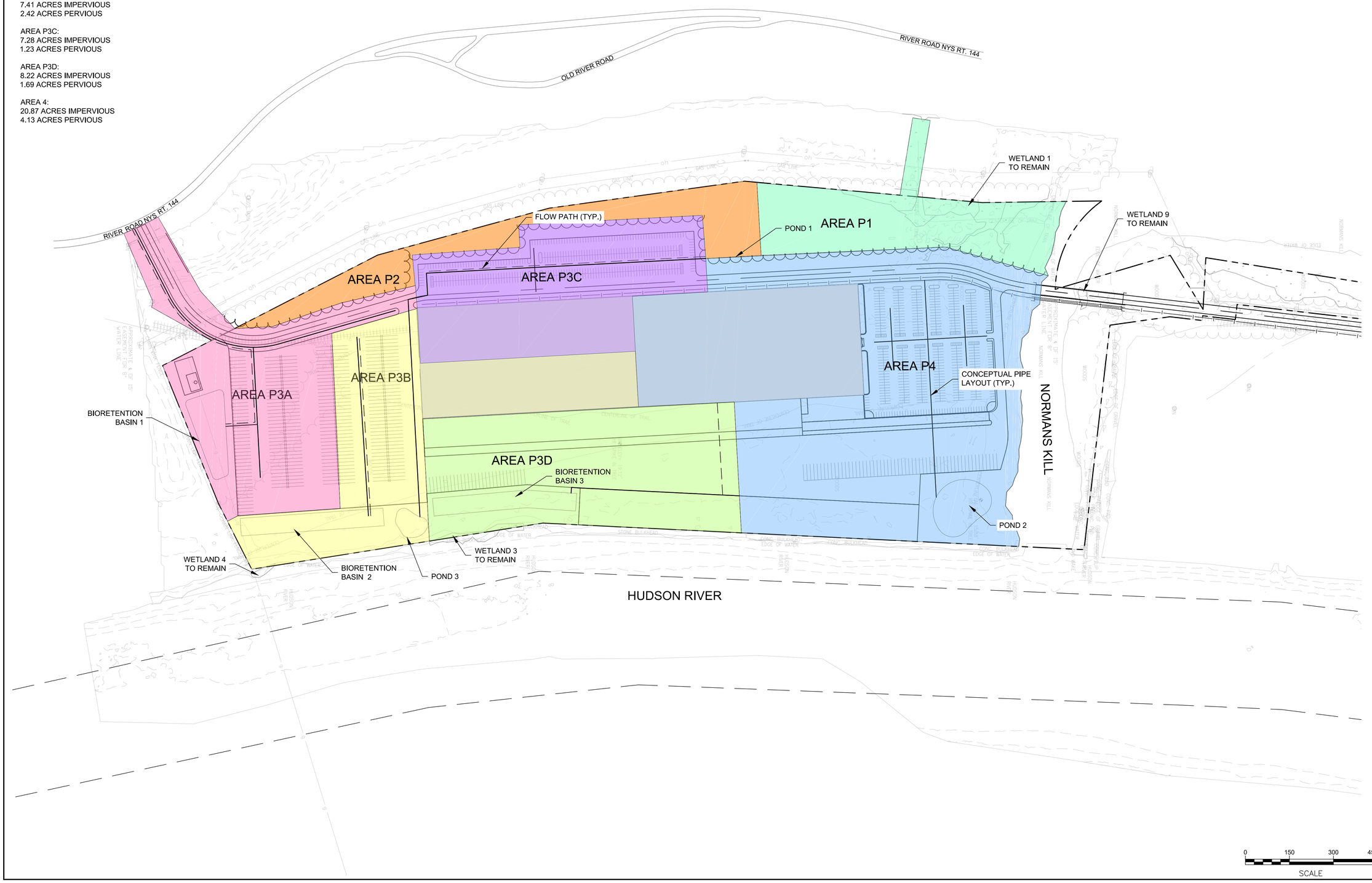
AREA P3A:
5.85 ACRES IMPERVIOUS
3.37 ACRES PERVIOUS

AREA P3B:
7.41 ACRES IMPERVIOUS
2.42 ACRES PERVIOUS

AREA P3C:
7.28 ACRES IMPERVIOUS
1.23 ACRES PERVIOUS

AREA P3D:
8.22 ACRES IMPERVIOUS
1.69 ACRES PERVIOUS

AREA 4:
20.87 ACRES IMPERVIOUS
4.13 ACRES PERVIOUS



McFarland Johnson
60 RAILROAD PLACE
SUITE 402
SARATOGA SPRINGS, NEW YORK 12866
P:518-580-9380 F:518-580-9383
mjinc.com

PROJECT MILESTONE
CONCEPT SITE PLAN

NO.	DATE	DESCRIPTION

CLIENT: ALBANY PORT DISTRICT COMMISSION

BETHLEHEM, NEW YORK

PROJECT: PORT OF ALBANY EXPANSION

DRAWN	NSO
DESIGNED	NSO
CHECKED	--
SCALE	1"=150'
DATE	MAY 2019
PROJECT	18437.00

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECT DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

DRAWING TITLE
PROPOSED DRAINAGE CONDITIONS

DRAWING NUMBER
D-02

---- OF ----

Summary for Subcatchment 1S: PROP 1

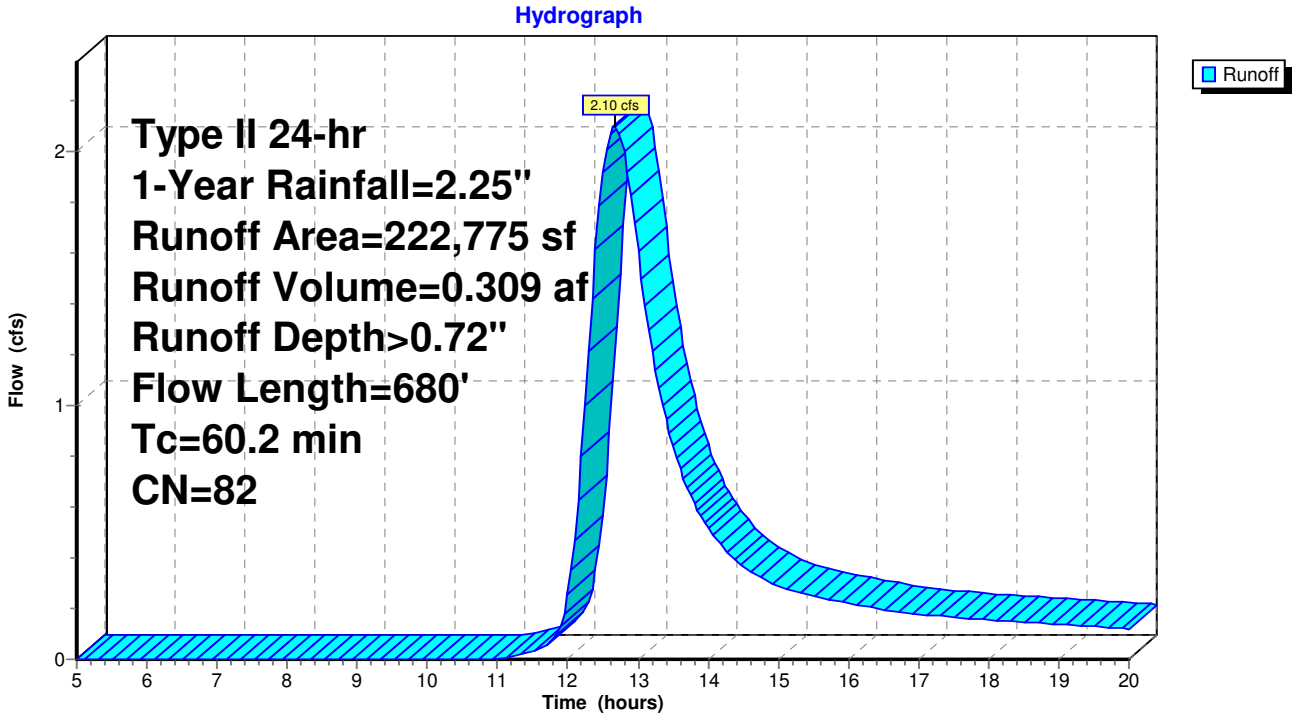
Runoff = 2.10 cfs @ 12.66 hrs, Volume= 0.309 af, Depth> 0.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-Year Rainfall=2.25"

Area (sf)	CN	Description
222,775	82	Woods/grass comb., Fair, HSG D
222,775		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
40.9	100	0.0050	0.04		**Sheet Flow, Sheet - Woods** Woods: Light underbrush n= 0.400 P2= 2.67"
19.3	580	0.0100	0.50		**Shallow Concentrated Flow, Shallow - Woods** Woodland Kv= 5.0 fps
60.2	680	Total			

Subcatchment 1S: PROP 1



Summary for Subcatchment 2S: PROP 2

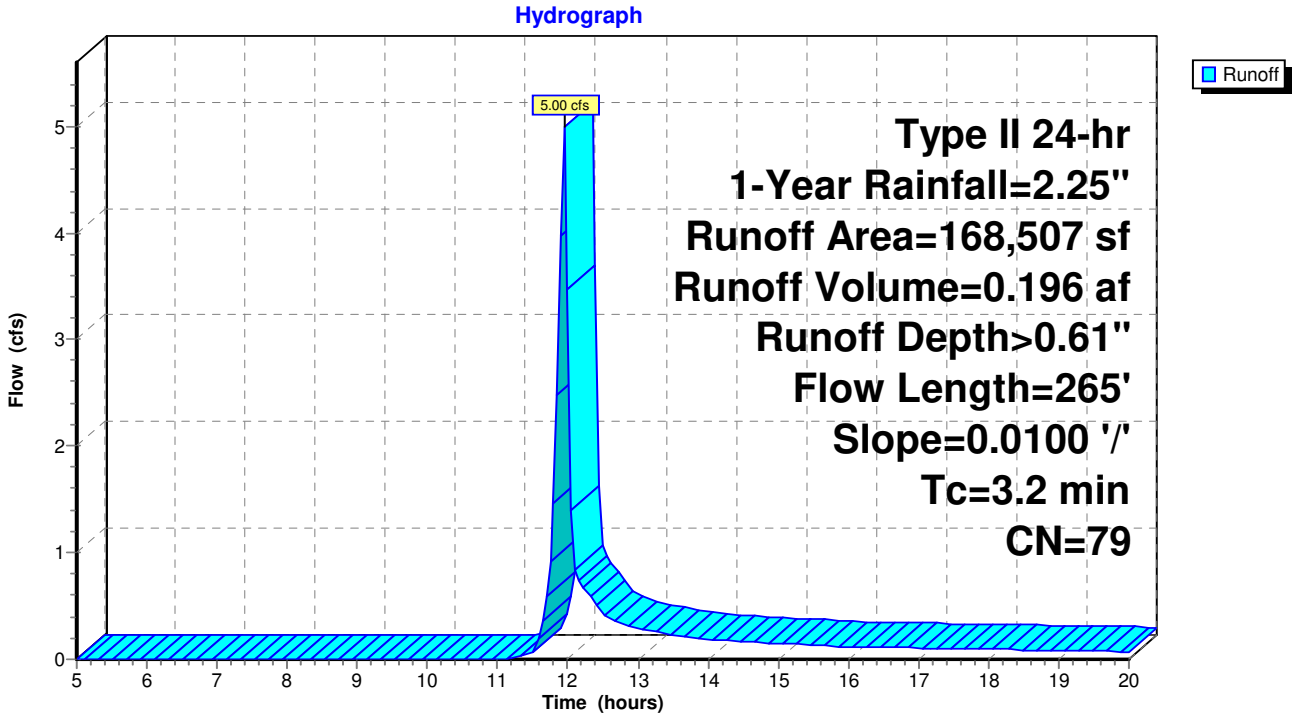
Runoff = 5.00 cfs @ 11.95 hrs, Volume= 0.196 af, Depth> 0.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-Year Rainfall=2.25"

Area (sf)	CN	Description
168,507	79	Woods, Fair, HSG D
168,507		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.95		**Sheet Flow, Sheet - Asphalt** Smooth surfaces n= 0.011 P2= 2.67"
1.4	165	0.0100	2.03		**Shallow Concentrated Flow, Shallow - Asphalt** Paved Kv= 20.3 fps
3.2	265	Total			

Subcatchment 2S: PROP 2

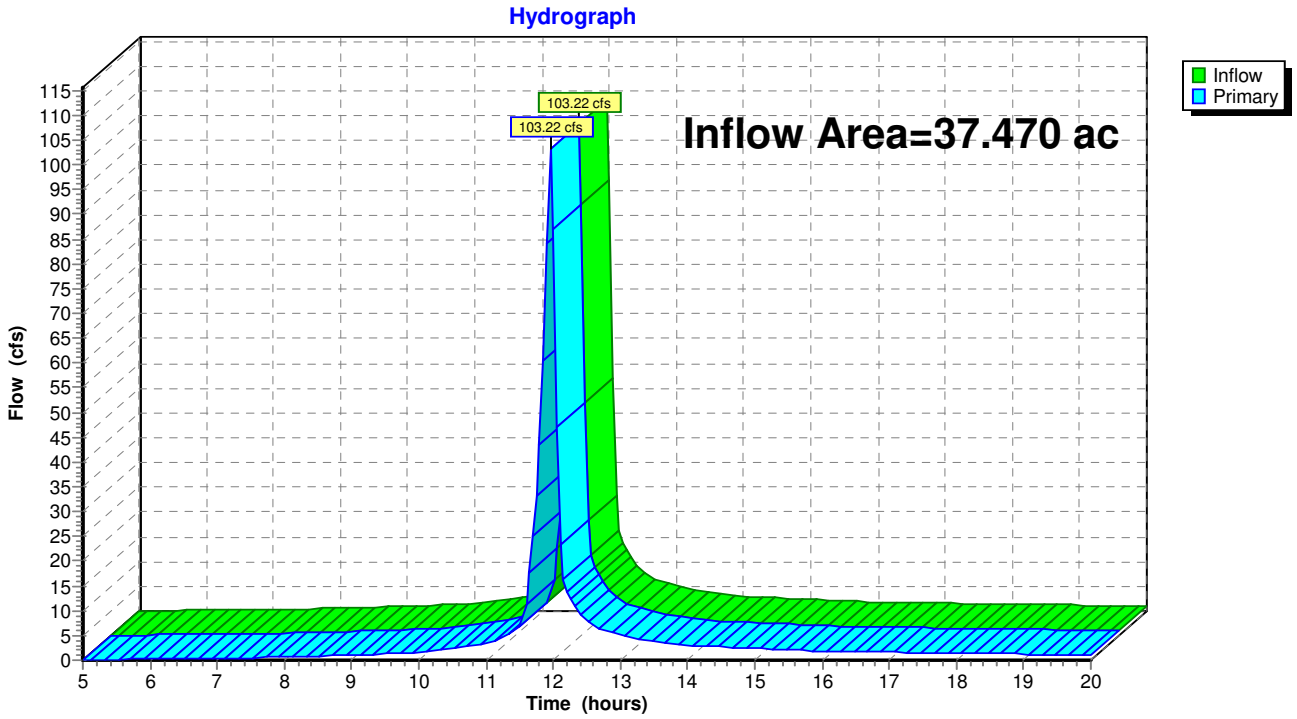


Summary for Link 1L: PROP 3

Inflow Area = 37.470 ac, 76.75% Impervious, Inflow Depth > 1.51" for 1-Year event
Inflow = 103.22 cfs @ 11.95 hrs, Volume= 4.720 af
Primary = 103.22 cfs @ 11.95 hrs, Volume= 4.720 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 1L: PROP 3



Summary for Subcatchment 7S: PROP 4

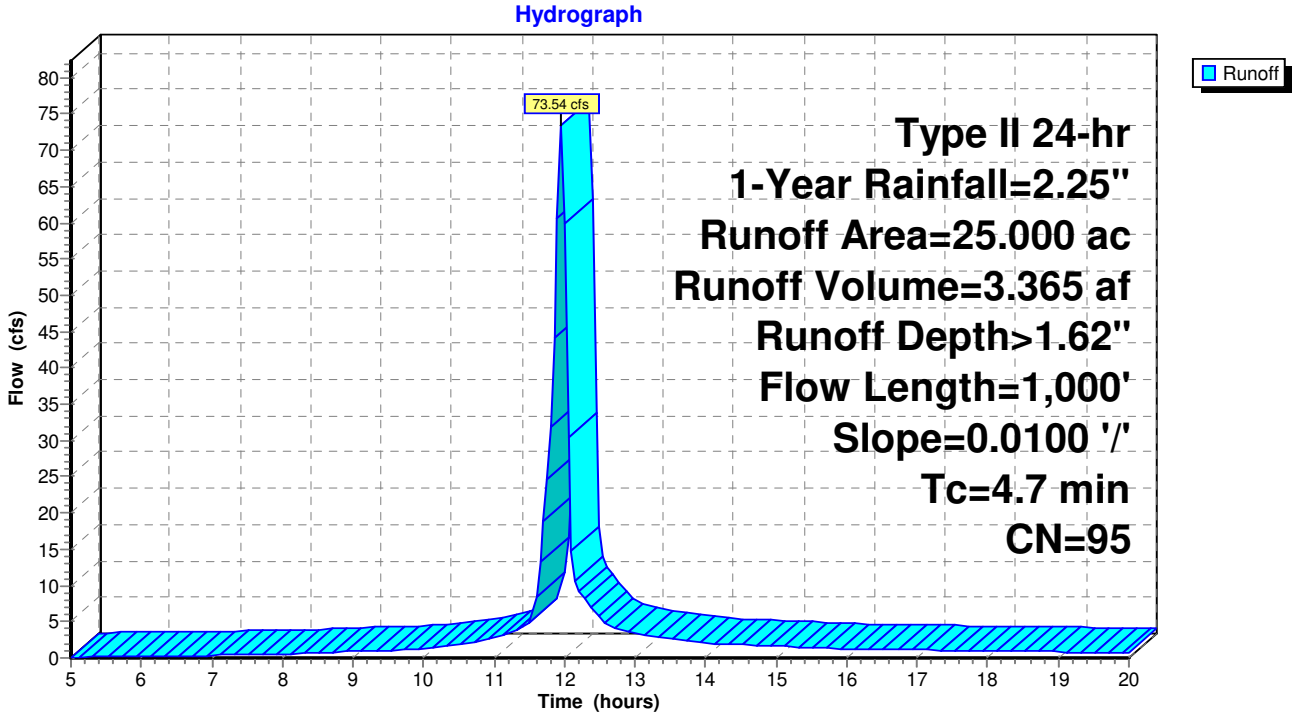
Runoff = 73.54 cfs @ 11.95 hrs, Volume= 3.365 af, Depth> 1.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-Year Rainfall=2.25"

	Area (ac)	CN	Description
*	20.870	98	Impervious
	4.130	80	>75% Grass cover, Good, HSG D
	25.000	95	Weighted Average
	4.130		16.52% Pervious Area
	20.870		83.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.95		**Sheet Flow, Sheet Flow - Asphalt** Smooth surfaces n= 0.011 P2= 2.67"
1.2	150	0.0100	2.03		**Shallow Concentrated Flow, Shallow concentrated** Paved Kv= 20.3 fps
1.7	750	0.0100	7.20	22.62	**Pipe Channel, Pipe Flow** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013 Corrugated PE, smooth interior
4.7	1,000	Total			

Subcatchment 7S: PROP 4



Summary for Subcatchment 1S: PROP 1

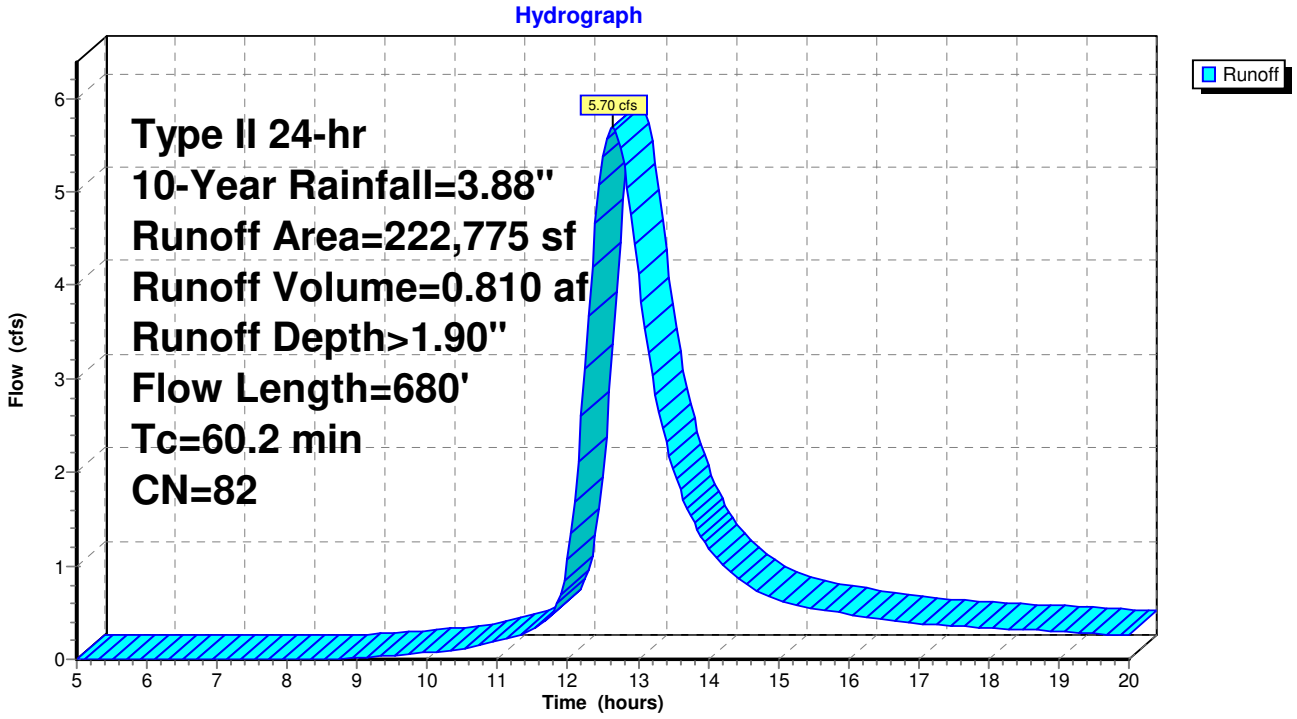
Runoff = 5.70 cfs @ 12.64 hrs, Volume= 0.810 af, Depth> 1.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-Year Rainfall=3.88"

Area (sf)	CN	Description
222,775	82	Woods/grass comb., Fair, HSG D
222,775		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
40.9	100	0.0050	0.04		**Sheet Flow, Sheet - Woods** Woods: Light underbrush n= 0.400 P2= 2.67"
19.3	580	0.0100	0.50		**Shallow Concentrated Flow, Shallow - Woods** Woodland Kv= 5.0 fps
60.2	680	Total			

Subcatchment 1S: PROP 1



Summary for Subcatchment 2S: PROP 2

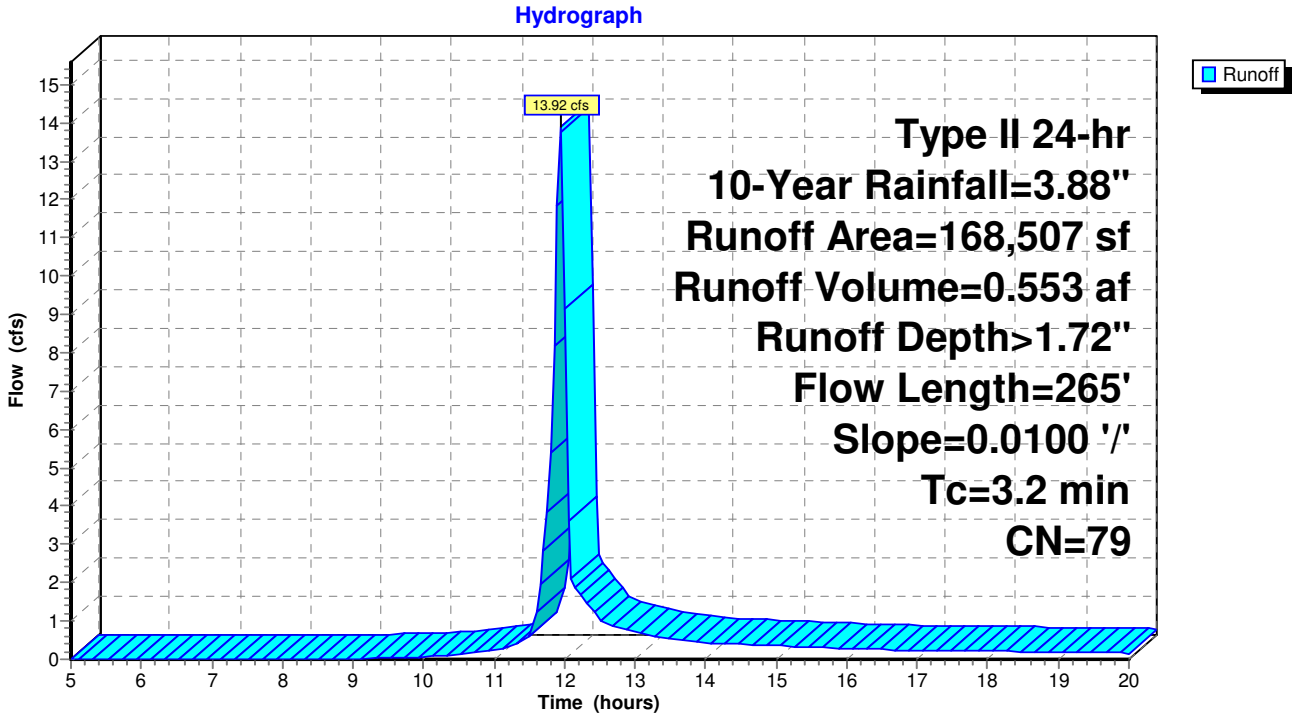
Runoff = 13.92 cfs @ 11.94 hrs, Volume= 0.553 af, Depth> 1.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-Year Rainfall=3.88"

Area (sf)	CN	Description
168,507	79	Woods, Fair, HSG D
168,507		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.95		**Sheet Flow, Sheet - Asphalt** Smooth surfaces n= 0.011 P2= 2.67"
1.4	165	0.0100	2.03		**Shallow Concentrated Flow, Shallow - Asphalt** Paved Kv= 20.3 fps
3.2	265	Total			

Subcatchment 2S: PROP 2

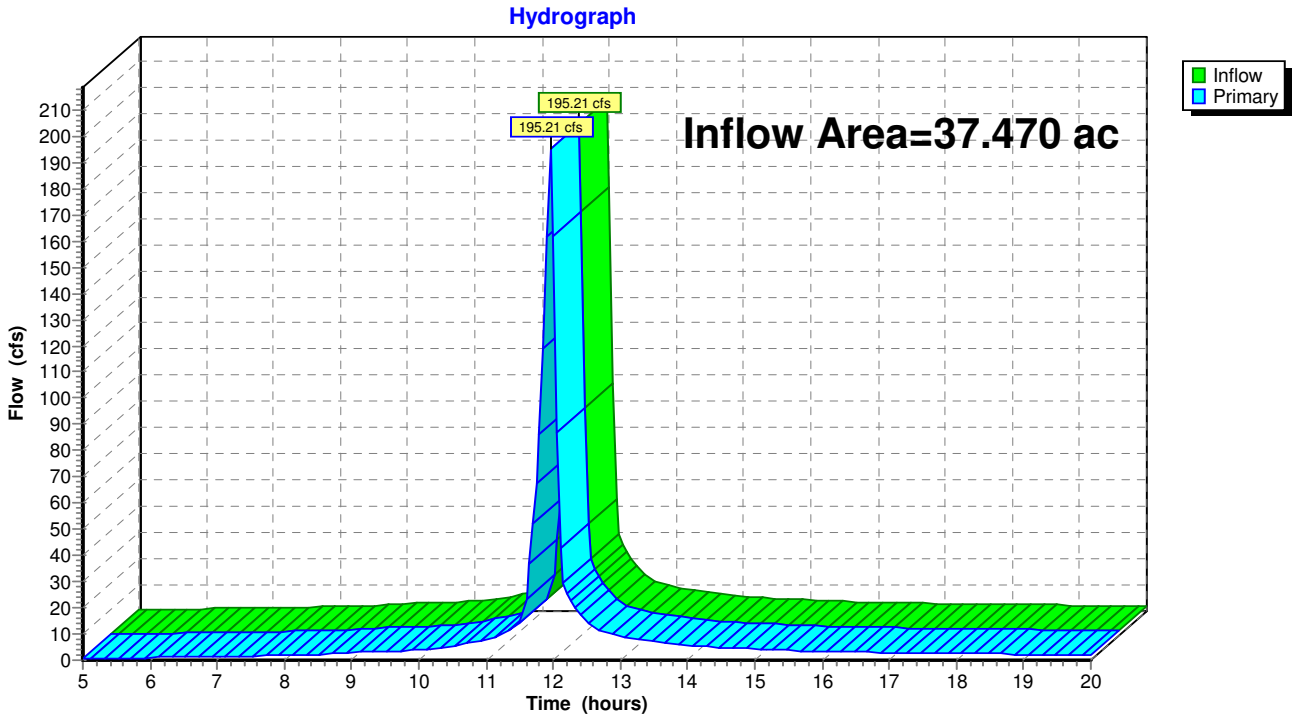


Summary for Link 1L: PROP 3

Inflow Area = 37.470 ac, 76.75% Impervious, Inflow Depth > 2.98" for 10-Year event
Inflow = 195.21 cfs @ 11.95 hrs, Volume= 9.312 af
Primary = 195.21 cfs @ 11.95 hrs, Volume= 9.312 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 1L: PROP 3



Summary for Subcatchment 7S: PROP 4

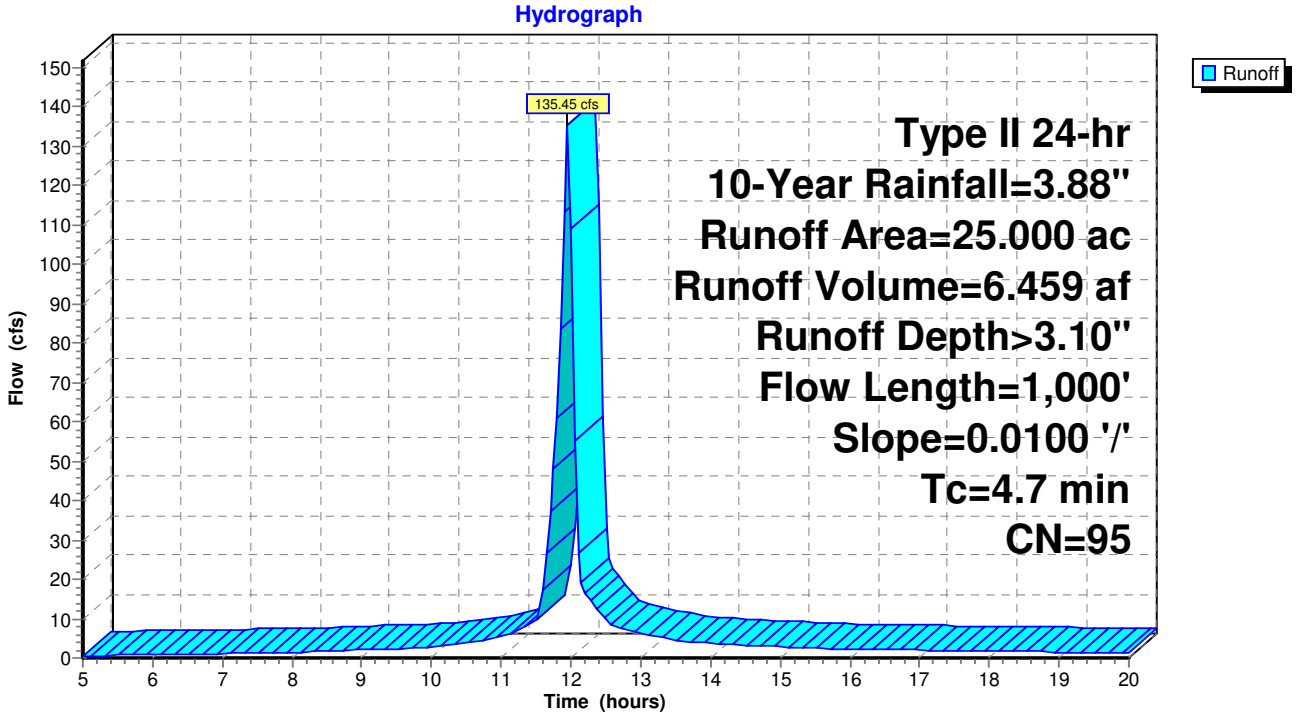
Runoff = 135.45 cfs @ 11.95 hrs, Volume= 6.459 af, Depth> 3.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-Year Rainfall=3.88"

	Area (ac)	CN	Description
*	20.870	98	Impervious
	4.130	80	>75% Grass cover, Good, HSG D
	25.000	95	Weighted Average
	4.130		16.52% Pervious Area
	20.870		83.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.95		**Sheet Flow, Sheet Flow - Asphalt** Smooth surfaces n= 0.011 P2= 2.67"
1.2	150	0.0100	2.03		**Shallow Concentrated Flow, Shallow concentrated** Paved Kv= 20.3 fps
1.7	750	0.0100	7.20	22.62	**Pipe Channel, Pipe Flow** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013 Corrugated PE, smooth interior
4.7	1,000	Total			

Subcatchment 7S: PROP 4



Summary for Subcatchment 1S: PROP 1

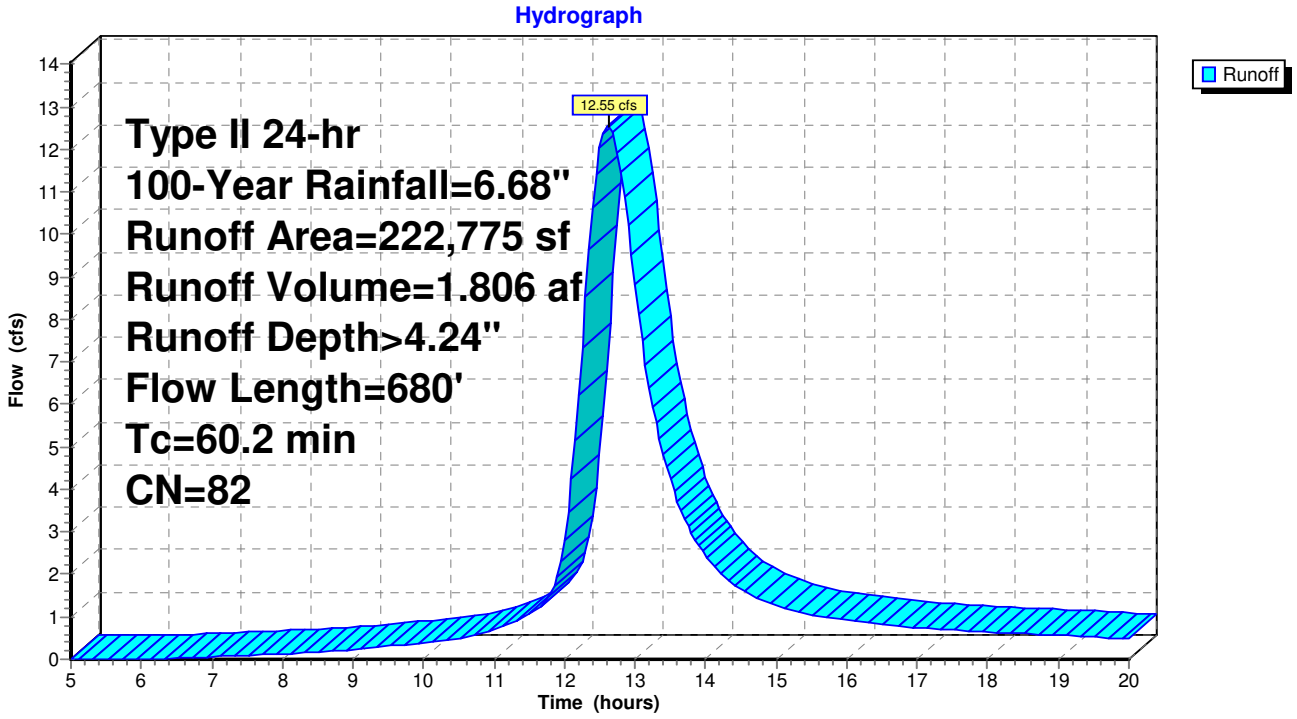
Runoff = 12.55 cfs @ 12.62 hrs, Volume= 1.806 af, Depth> 4.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-Year Rainfall=6.68"

Area (sf)	CN	Description
222,775	82	Woods/grass comb., Fair, HSG D
222,775		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
40.9	100	0.0050	0.04		**Sheet Flow, Sheet - Woods** Woods: Light underbrush n= 0.400 P2= 2.67"
19.3	580	0.0100	0.50		**Shallow Concentrated Flow, Shallow - Woods** Woodland Kv= 5.0 fps
60.2	680	Total			

Subcatchment 1S: PROP 1



Summary for Subcatchment 2S: PROP 2

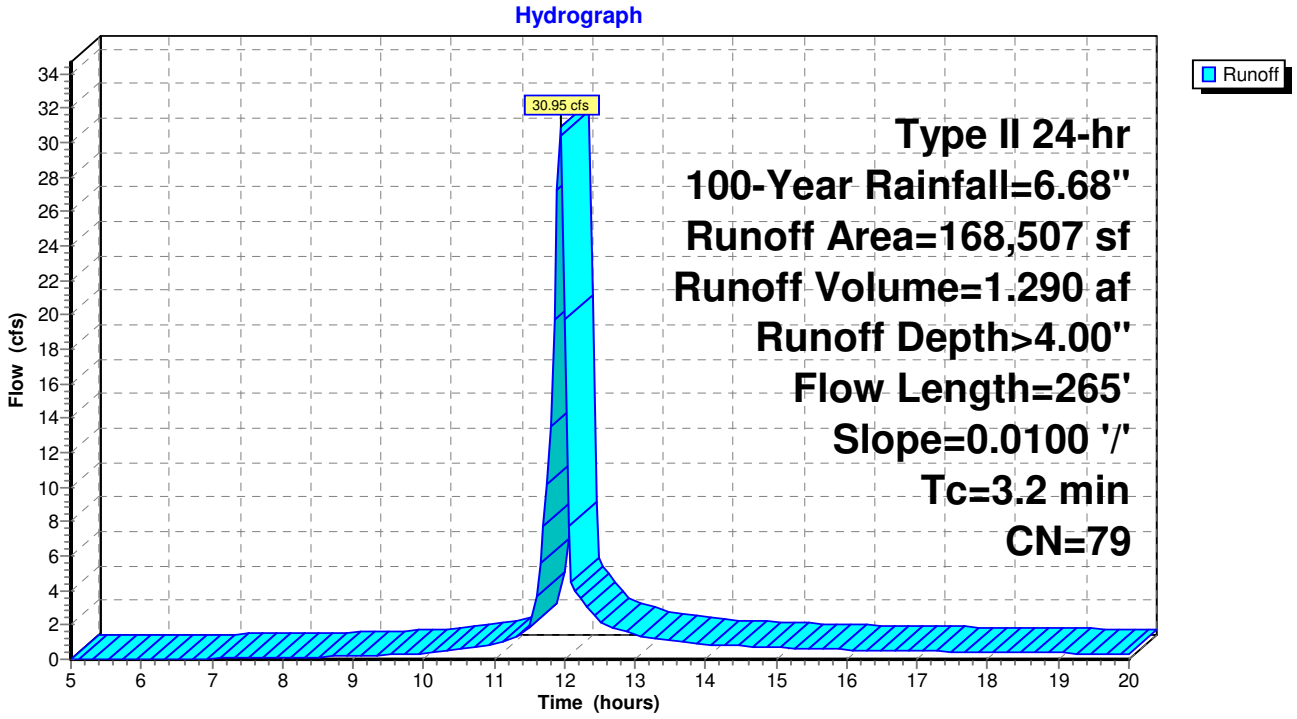
Runoff = 30.95 cfs @ 11.94 hrs, Volume= 1.290 af, Depth> 4.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-Year Rainfall=6.68"

Area (sf)	CN	Description
168,507	79	Woods, Fair, HSG D
168,507		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.95		**Sheet Flow, Sheet - Asphalt** Smooth surfaces n= 0.011 P2= 2.67"
1.4	165	0.0100	2.03		**Shallow Concentrated Flow, Shallow - Asphalt** Paved Kv= 20.3 fps
3.2	265	Total			

Subcatchment 2S: PROP 2

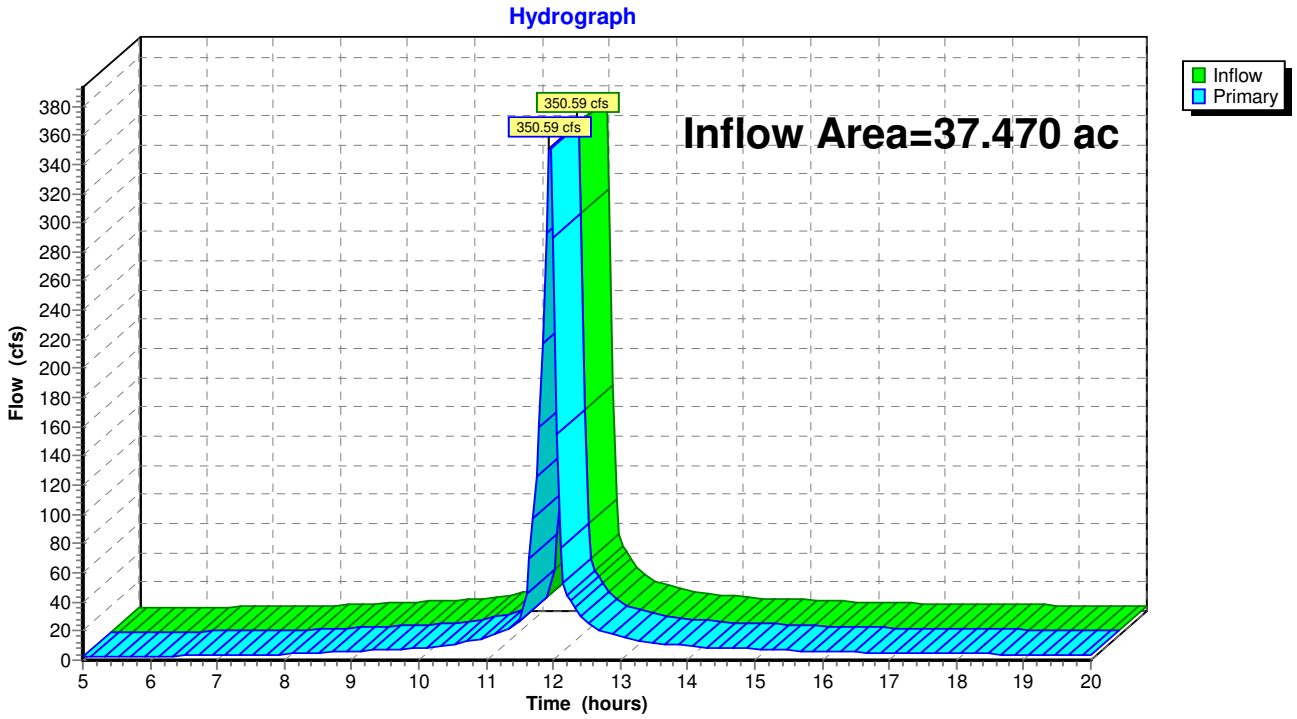


Summary for Link 1L: PROP 3

Inflow Area = 37.470 ac, 76.75% Impervious, Inflow Depth > 5.53" for 100-Year event
Inflow = 350.59 cfs @ 11.95 hrs, Volume= 17.280 af
Primary = 350.59 cfs @ 11.95 hrs, Volume= 17.280 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 1L: PROP 3



Summary for Subcatchment 7S: PROP 4

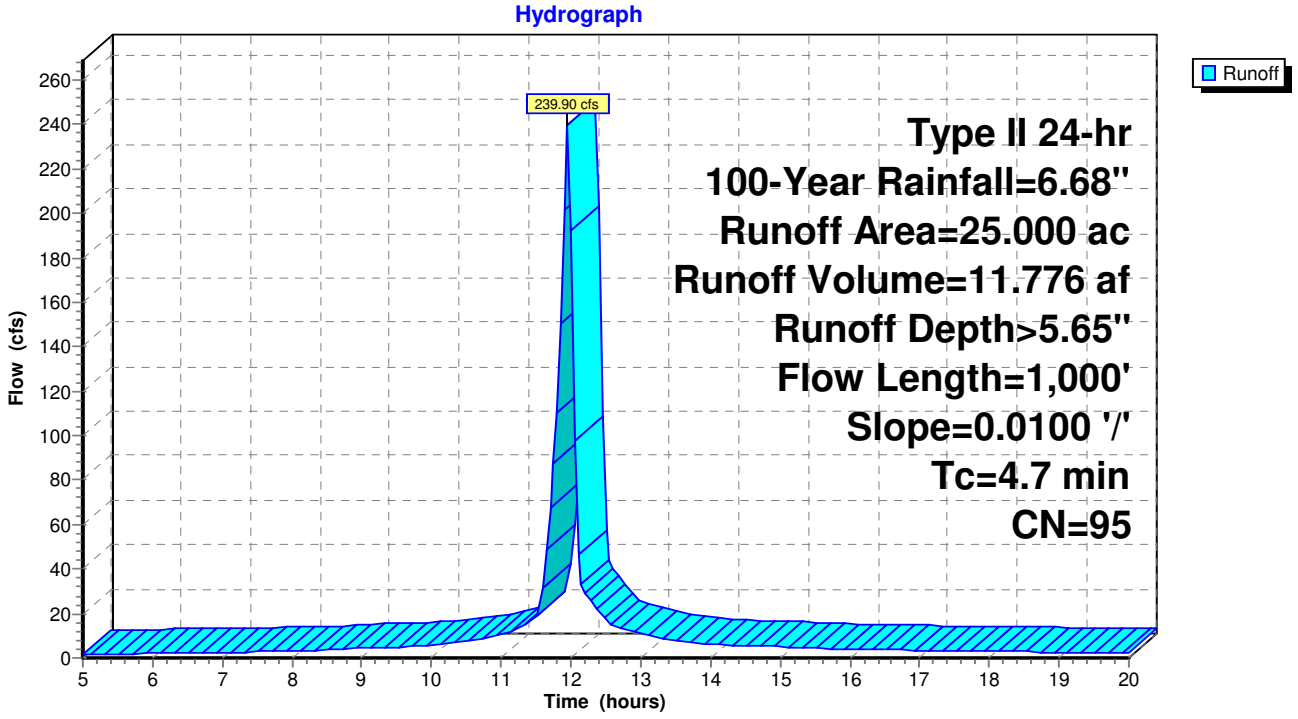
Runoff = 239.90 cfs @ 11.95 hrs, Volume= 11.776 af, Depth> 5.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-Year Rainfall=6.68"

	Area (ac)	CN	Description
*	20.870	98	Impervious
	4.130	80	>75% Grass cover, Good, HSG D
	25.000	95	Weighted Average
	4.130		16.52% Pervious Area
	20.870		83.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.95		**Sheet Flow, Sheet Flow - Asphalt** Smooth surfaces n= 0.011 P2= 2.67"
1.2	150	0.0100	2.03		**Shallow Concentrated Flow, Shallow concentrated** Paved Kv= 20.3 fps
1.7	750	0.0100	7.20	22.62	**Pipe Channel, Pipe Flow** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013 Corrugated PE, smooth interior
4.7	1,000	Total			

Subcatchment 7S: PROP 4



Appendix C

Water Quality and Runoff Reduction Volume Calculations

Version 1.6
Last Updated: 03/28/2014

Total Water Quality Volume Calculation
WQv(acre-feet) = [(P)(Rv)(A)] /12

Is this project subject to Chapter 10 of the NYS Design Manual (i.e. WQv is equal to post-development 1 year runoff volume)?.....	No

Design Point:	1	
P=	1.20	*inch*

Manually enter P, Total Area and Impervious Cover.

Breakdown of Subcatchments

Catchment Number	Total Area *(Acres)*	Impervious Area *(Acres)*	Percent Impervious *%*	Rv	WQv *(ft^3)*	Description
1	9.22	5.85	63%	0.62	24,943	3a
2	9.83	7.41	75%	0.73	31,191	3b
3	8.51	7.28	86%	0.82	30,394	3c
4	9.91	8.22	83%	0.80	34,384	3d
5	25.00	20.87	83%	0.80	87,264	p4
6						
7						
8						
9						
10						
Subtotal (1-30)	62.47	49.63	79%	0.76	**208,176**	**Subtotal 1**
Total	62.47	49.63	79%	0.76	**208,176**	**Initial WQv**

Identify Runoff Reduction Techniques By Area

Technique	Total Contributing Area *(Acre)*	Contributing Impervious Area *(Acre)*	Notes
Conservation of Natural Areas	0.00	0.00	*minimum 10,000 sf*
Riparian Buffers	0.00	0.00	*maximum contributing length 75 feet to 150 feet*
Filter Strips	0.00	0.00	
Tree Planting	0.00	0.00	*Up to 100 sf directly connected impervious area may be subtracted per tree*
Total	**0.00**	**0.00**	

Recalculate WQv after application of Area Reduction Techniques

	Total Area *(Acres)*	Impervious Area *(Acres)*	Percent Impervious *%*	Runoff Coefficient Rv	WQv *(ft^3)*
"<<Initial WQv"	62.47	49.63	79%	0.76	208,176
Subtract Area	0.00	0.00			
WQv adjusted after Area Reductions	**62.47**	**49.63**	79%	0.76	208,176
Disconnection of Rooftops		0.00			
Adjusted WQv after Area Reduction and Rooftop Disconnect	62.47	49.63	79%	0.76	**208,176**
WQv reduced by Area Reduction techniques					0

Runoff Reduction Volume and Treated volumes						
	Runoff Reduction Techiques/Standard SMPs		**Total Contributing Area**	**Total Contributing Impervious Area**	**WQv Reduced (RRv)**	**WQv Treated**
			(acres)	**(acres)**	**cf**	**cf**
Area/Volume Reduction	Conservation of Natural Areas	RR-1	0.00	0.00		
	Sheetflow to Riparian Buffers/Filter Strips	RR-2	0.00	0.00		
	Tree Planting/Tree Pit	RR-3	0.00	0.00		
	Disconnection of Rooftop Runoff	RR-4		0.00		
	Vegetated Swale	RR-5	0.00	0.00	0	
	Rain Garden	RR-6	0.00	0.00	0	
	Stormwater Planter	RR-7	0.00	0.00	0	
	Rain Barrel/Cistern	RR-8	0.00	0.00	0	
	Porous Pavement	RR-9	0.00	0.00	0	
	Green Roof (Intensive & Extensive)	RR-10	0.00	0.00	0	
Standard SMPs w/RRv Capacity	Infiltration Trench	I-1	0.00	0.00	0	0
	Infiltration Basin	I-2	0.00	0.00	0	0
	Dry Well	I-3	0.00	0.00	0	0
	Underground Infiltration System	I-4	0.00			
	Bioretention & Infiltration Bioretention	F-5	28.96	21.48	41220	49298
	Dry swale	O-1	0.00	0.00	0	0
Standard SMPs	Micropool Extended Detention (P-1)	P-1				
	Wet Pond (P-2)	P-2				25000.000
	Wet Extended Detention (P-3)	P-3				100425.000
	Multiple Pond system (P-4)	P-4				
	Pocket Pond (p-5)	P-5				
	Surface Sand filter (F-1)	F-1				
	Underground Sand filter (F-2)	F-2				
	Perimeter Sand Filter (F-3)	F-3				
	Organic Filter (F-4	F-4				
	Shallow Wetland (W-1)	W-1				
	Extended Detention Wetland (W-2	W-2				
	Pond/Wetland System (W-3)	W-3				
	Pocket Wetland (W-4)	W-4				
	Wet Swale (O-2)	O-2				
Totals by Area Reduction →			0.00	0.00	0	
Totals by Volume Reduction →			0.00	0.00	0	
Totals by Standard SMP w/RRV →			28.96	21.48	41220	49298
Totals by Standard SMP →			0.00	0.00		125425
Totals (Area + Volume + all SMPs) →			28.96	21.48	41,221	174,723
	Impervious Cover √	error				

Minimum RRv

Enter the Soils Data for the site		
Soil Group	Acres	S
A		55%
B		40%
C		30%
D	**63.95**	20%
Total Area	63.95	
Calculate the Minimum RRv		
S =	**0.20**	
Impervious =	49.63	*acre*
Precipitation	1.2	*in*
Rv	0.95	
Minimum RRv	**41,076**	***ft3***
	0.94	af

NOI QUESTIONS

#	NOI Question	Reported Value	
		cf	af
28	Total Water Quality Volume (WQv) Required	208176	*4.779*
30	Total RRV Provided	41221	*0.946*
31	Is RRv Provided ≥WQv Required?	No	
32	Minimum RRv	41076	*0.943*
32a	Is RRv Provided ≥ Minimum RRv Required?	Yes	
33a	Total WQv Treated	174723	*4.011*
34	Sum of Volume Reduced & Treated	215944	*4.957*
34	Sum of Volume Reduced and Treated	215944	*4.957*
35	Is Sum RRv Provided and WQv Provided ≥WQv Required?	Yes	

Apply Peak Flow Attenuation			
36	Channel Protection	*Cpv*	
37	Overbank	*Qp*	
37	Extreme Flood Control	*Qf*	
	Are Quantity Control requirements met?	*Yes*	Plan Completed

Planning

Practice	Description	Application
Preservation of Undisturbed Areas	Delineate and place into permanent conservation undisturbed forests, native vegetated areas, riparian corridors, wetlands, and natural terrain.	Considered & Applied
Preservation of Buffers	Define, delineate and preserve naturally vegetated buffers along perennial streams, rivers, shorelines and wetlands.	Considered & Applied
Reduction of Clearing and Grading	Limit clearing and grading to the minimum amount needed for roads, driveways, foundations, utilities and stormwater management facilities.	Considered & Applied
Locating Development in Less Sensitive Areas	Avoid sensitive resource areas such as floodplains, steep slopes, erodible soils, wetlands, mature forests and critical habitats by locating development to fit the terrain in areas that will create the least impact.	Considered & Not Applied
Open Space Design	Use clustering, conservation design or open space design to reduce impervious cover, preserve more open space and protect water resources.	Considered & Applied
Soil Restoration	Restore the original properties and porosity of the soil by deep till and amendment with compost to reduce the generation of runoff and enhance the runoff reduction performance of post construction practices. ***Treat compacted areas as impervious cover in WQv Calculation Worksheet and modify curve number as specified in Section 5.1.6, page 5-21***	Considered & Not Applied
Roadway Reduction	Minimize roadway widths and lengths to reduce site impervious area	Considered & Applied
Sidewalk Reduction	Minimize sidewalk lengths and widths to reduce site impervious area	Considered & Applied
Driveway Reduction	Minimize driveway lengths and widths to reduce site impervious area	Considered & Applied
Cul-de-sac Reduction	Minimize the number of cul-de-sacs and incorporate landscaped areas to reduce their impervious cover.	Considered & Applied
Building Footprint Reduction	Reduce the impervious footprint of residences and commercial buildings by using alternate or taller buildings while maintaining the same floor to area ratio.	Considered & Applied
Parking Reduction	Reduce imperviousness on parking lots by eliminating unneeded spaces, providing compact car spaces and efficient parking lanes, minimizing stall dimensions, using porous pavement surfaces in overflow parking areas, and using multi-storied parking decks where appropriate.	Considered & Applied

Bioretention Worksheet

(For use on HSG C or D Soils with underdrains)

Af=WQv*(df)/[k*(hf+df)(tf)]

Af	Required Surface Area (ft2)
WQv	Water Quality Volume (ft3)
df	Depth of the Soil Medium (feet)
hf	Average height of water above the planter bed
tf	Volume Through the Filter Media (days)

k — The hydraulic conductivity [ft/day], can be varied depending on the properties of the soil media. Some reported conductivity values are: ***Sand*** - 3.5 ft/day (City of Austin 1988); ***Peat*** - 2.0 ft/day (Galli 1990); ***Leaf Compost*** - 8.7 ft/day (Claytor and Schueler, 1996); ***Bioretention Soil*** (0.5 ft/day (Claytor &

Design Point:	**1**

Enter Site Data For Drainage Area to be Treated by Practice							
Catchment Number	**Total Area** *(Acres)*	**Impervious Area** *(Acres)*	**Percent Impervious** *%*	**Rv**	**WQv** *(ft^3)*	**Precipitation** *(in)*	**Description**
1	9.22	5.85	0.63	0.62	24943.11	1.20	3a
Enter Impervious Area Reduced by Disconnection of Rooftops		0.00	63%	0.62	24,943	<<WQv after adjusting for Disconnected Rooftops	
Enter the portion of the WQv that is not reduced for all practices routed to this practice.					0	*ft^3*	

Soil Information			
Soil Group	D		
Soil Infiltration Rate	0.10	*in/hour*	*Okay*
Using Underdrains?	Yes	*Okay*	

Calculate the Minimum Filter Area				
		Value	Units	Notes
WQv		24,943	*ft^3*	
Enter Depth of Soil Media	*df*	2.5	*ft*	*2.5-4 ft*
Enter Hydraulic Conductivity	*k*	0.5	*ft/day*	
Enter Average Height of Ponding	*hf*	0.5	*ft*	*6 inches max.*
Enter Filter Time	*tf*	2	*days*	
Required Filter Area	***Af***	**20786**	***ft^2***	

Determine Actual Bio-Retention Area			
Filter Width	164	*ft*	
Filter Length	164	*ft*	
Filter Area	26896	*ft^2*	
Actual Volume Provided	32275	*ft^3*	

Determine Runoff Reduction			
Is the Bioretention contributing flow to another practice?	No	Select Practice	N/A
RRv	12,910		
RRv applied	**12,910**	***ft^3***	***This is 40% of the storage provided or WQv whichever is less.***
Volume Treated	12,033	*ft^3*	*This is the portion of the WQv that is not reduced in the practice.*
Volume Directed	0	*ft^3*	This volume is directed another practice

Bioretention Worksheet

Sizing √	OK		*Check to be sure Area provided ≥ Af*

(For use on HSG C or D Soils with underdrains)

Af=WQv*(df)/[k*(hf+df)(tf)]

Af	Required Surface Area (ft2)
WQv	Water Quality Volume (ft3)
df	Depth of the Soil Medium (feet)
hf	Average height of water above the planter bed
tf	Volume Through the Filter Media (days)

k — The hydraulic conductivity [ft/day], can be varied depending on the properties of the soil media. Some reported conductivity values are: ***Sand*** - 3.5 ft/day (City of Austin 1988); ***Peat*** - 2.0 ft/day (Galli 1990); ***Leaf Compost*** - 8.7 ft/day (Claytor and Schueler, 1996); ***Bioretention Soil*** (0.5 ft/day (Claytor & Schueler, 1996)

Design Point:	**1**

Enter Site Data For Drainage Area to be Treated by Practice

Catchment Number	**Total Area** *(Acres)*	**Impervious Area** *(Acres)*	**Percent Impervious** *%*	**Rv**	**WQv** *(ft^3)*	**Precipitation** *(in)*	**Description**
2	9.83	7.41	0.75	0.73	31191.14	1.20	3b
Enter Impervious Area Reduced by Disconnection of Rooftops		0.00	75%	0.73	31,191	<<WQv after adjusting for Disconnected Rooftops	
Enter the portion of the WQv that is not reduced for all practices routed to this practice.					0	ft^3	

Soil Information

Soil Group	D		
Soil Infiltration Rate	0.10	*in/hour*	*Okay*
Using Underdrains?	Yes	*Okay*	

Calculate the Minimum Filter Area

		Value	Units	Notes
WQv		31,191	ft^3	
Enter Depth of Soil Media	*df*	2.5	*ft*	*2.5-4 ft*
Enter Hydraulic Conductivity	*k*	0.5	*ft/day*	
Enter Average Height of Ponding	*hf*	0.5	*ft*	*6 inches max.*
Enter Filter Time	*tf*	2	*days*	
Required Filter Area	***Af***	**25993**	ft^2	

Determine Actual Bio-Retention Area

Filter Width	488	*ft*	
Filter Length	60	*ft*	
Filter Area	29280	ft^2	
Actual Volume Provided	35136	ft^3	

Determine Runoff Reduction

Is the Bioretention contributing flow to another practice?	No	Select Practice	N/A
RRv	14,054		
RRv applied	**14,054**	ft^3	***This is 40% of the storage provided or WQv whichever is less.***
Volume Treated	17,137	ft^3	*This is the portion of the WQv that is not reduced in the practice.*
Volume Directed	0	ft^3	This volume is directed another practice

Bioretention Worksheet

Sizing √	OK		*Check to be sure Area provided ≥ Af*

(For use on HSG C or D Soils with underdrains)

Af=WQv*(df)/[k*(hf+df)(tf)]

Af	Required Surface Area (ft2)
WQv	Water Quality Volume (ft3)
df	Depth of the Soil Medium (feet)
hf	Average height of water above the planter bed
tf	Volume Through the Filter Media (days)

k — The hydraulic conductivity [ft/day], can be varied depending on the properties of the soil media. Some reported conductivity values are: ***Sand*** - 3.5 ft/day (City of Austin 1988); ***Peat*** - 2.0 ft/day (Galli 1990); ***Leaf Compost*** - 8.7 ft/day (Claytor and Schueler, 1996); ***Bioretention Soil*** (0.5 ft/day (Claytor &

Design Point:	**1**

Enter Site Data For Drainage Area to be Treated by Practice

Catchment Number	**Total Area** *(Acres)*	**Impervious Area** *(Acres)*	**Percent Impervious** *%*	**Rv**	**WQv** *(ft^3)*	**Precipitation** *(in)*	**Description**
4	9.91	8.22	0.83	0.80	34384.09	1.20	3d
Enter Impervious Area Reduced by Disconnection of Rooftops		0.00	83%	0.80	34,384	<<WQv after adjusting for Disconnected Rooftops	
Enter the portion of the WQv that is not reduced for all practices routed to this practice.					0	*ft^3*	

Soil Information

Soil Group	D		
Soil Infiltration Rate	0.10	*in/hour*	*Okay*
Using Underdrains?	Yes	*Okay*	

Calculate the Minimum Filter Area

		Value	Units	Notes
WQv		34,384	*ft^3*	
Enter Depth of Soil Media	*df*	2.5	*ft*	*2.5-4 ft*
Enter Hydraulic Conductivity	*k*	0.5	*ft/day*	
Enter Average Height of Ponding	*hf*	0.5	*ft*	*6 inches max.*
Enter Filter Time	*tf*	2	*days*	
Required Filter Area	***Af***	**28653**	***ft^2***	

Determine Actual Bio-Retention Area

Filter Width	495	*ft*	
Filter Length	60	*ft*	
Filter Area	29700	*ft^2*	
Actual Volume Provided	35640	*ft^3*	

Determine Runoff Reduction

Is the Bioretention contributing flow to another practice?	No	Select Practice	N/A
RRv	14,256		
RRv applied	**14,256**	***ft^3***	***This is 40% of the storage provided or WQv whichever is less.***
Volume Treated	20,128	*ft^3*	*This is the portion of the WQv that is not reduced in the practice.*
Volume Directed	0	*ft^3*	This volume is directed another practice

Appendix D

NRCS Soils Report

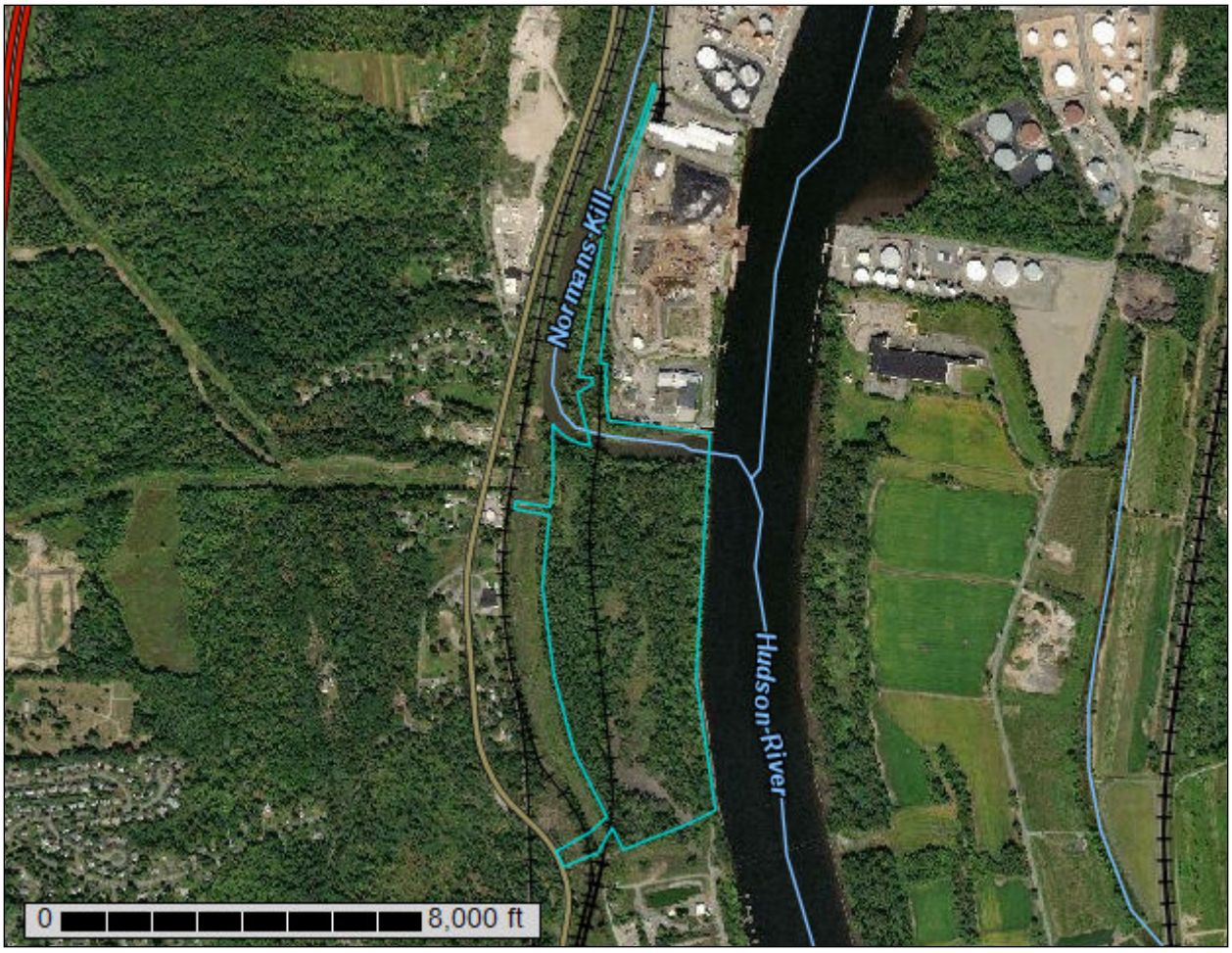
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Albany County, New York



March 25, 2019

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

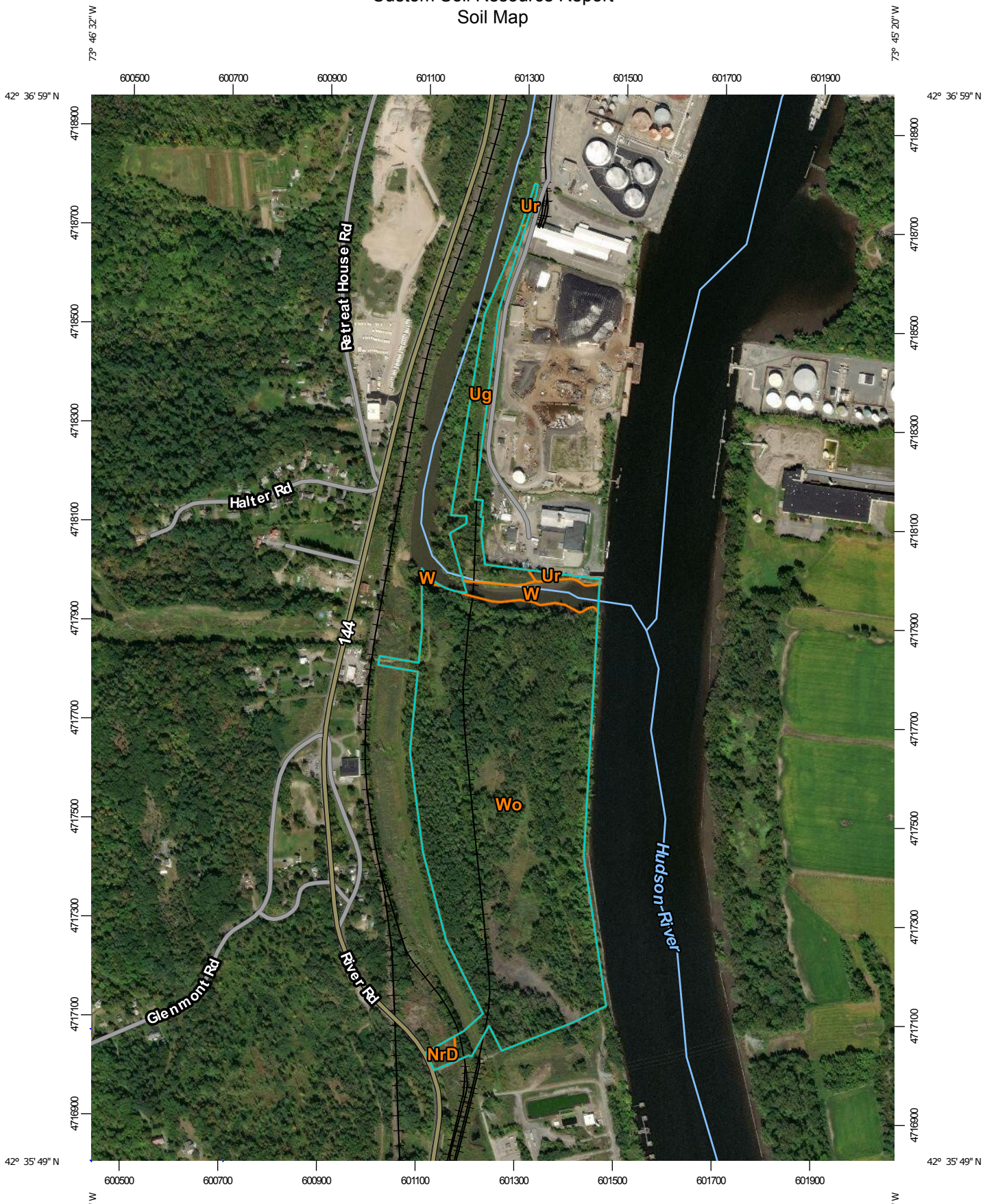
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:10,500 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 150 300 600 900

Feet: 0 500 1000 2000 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Albany County, New York
Survey Area Data: Version 16, Sep 1, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 1, 2014—Sep 22, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
NrD	Nassau very channery silt loam, hilly, very rocky	0.6	0.7%
Ug	Udorthents, loamy	7.0	8.4%
Ur	Urban land	0.7	0.8%
W	Water	2.9	3.5%
Wo	Wayland soils complex, non-calcareous substratum, 0 to 3 percent slopes, frequently flooded	72.2	86.6%
Totals for Area of Interest		**83.4**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Albany County, New York

NrD—Nassau very channery silt loam, hilly, very rocky

Map Unit Setting

National map unit symbol: 9ph1
Elevation: 600 to 1,800 feet
Mean annual precipitation: 36 to 41 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 100 to 170 days
Farmland classification: Not prime farmland

Map Unit Composition

Nassau, hilly, and similar soils: 70 percent
Minor components: 30 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Nassau, Hilly

Setting

Landform: Till plains, ridges, benches
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Channery loamy till derived mainly from local slate or shale

Typical profile

H1 - 0 to 8 inches: very channery silt loam
H2 - 8 to 16 inches: very channery silt loam
H3 - 16 to 20 inches: unweathered bedrock

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 1.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Rock outcrop

Percent of map unit: 9 percent
Hydric soil rating: Unranked

Manlius
Percent of map unit: 8 percent
Hydric soil rating: No

Unnamed soils
Percent of map unit: 8 percent

Lordstown
Percent of map unit: 5 percent
Hydric soil rating: No

Ug—Udorthents, loamy

Map Unit Setting
National map unit symbol: 9pj1
Mean annual precipitation: 36 to 41 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 100 to 170 days
Farmland classification: Not prime farmland

Map Unit Composition
Udorthents, loamy, and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Udorthents, Loamy

Typical profile
H1 - 0 to 4 inches: loam
H2 - 4 to 70 inches: channery loam

Properties and qualities
Slope: 0 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.06 to 5.95 in/hr)
Depth to water table: About 36 to 72 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Available water storage in profile: Low (about 5.5 inches)

Minor Components

Unnamed soils
Percent of map unit: 10 percent

Ur—Urban land

Map Unit Setting

National map unit symbol: 9pj8
Mean annual precipitation: 36 to 41 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 100 to 170 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Typical profile

H1 - 0 to 6 inches: variable

Minor Components

Unnamed soils

Percent of map unit: 10 percent

Udorthents

Percent of map unit: 5 percent
Hydric soil rating: No

W—Water

Map Unit Composition

Water: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Wo—Wayland soils complex, non-calcareous substratum, 0 to 3 percent slopes, frequently flooded

Map Unit Setting

National map unit symbol: 2srgt
Elevation: 160 to 1,970 feet
Mean annual precipitation: 31 to 70 inches
Mean annual air temperature: 43 to 52 degrees F

Frost-free period: 105 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Wayland and similar soils: 60 percent
Wayland, very poorly drained, and similar soils: 30 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wayland

Setting

Landform: Flood plains
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Silty and clayey alluvium derived from interbedded sedimentary rock

Typical profile

Ap - 0 to 9 inches: silt loam
Bg - 9 to 21 inches: silt loam
Cg1 - 21 to 28 inches: silt loam
Cg2 - 28 to 47 inches: silt loam
Cg3 - 47 to 54 inches: silt loam
Cg4 - 54 to 60 inches: silt loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: Frequent
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water storage in profile: Very high (about 13.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D
Hydric soil rating: Yes

Description of Wayland, Very Poorly Drained

Setting

Landform: Flood plains
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Silty and clayey alluvium derived from interbedded sedimentary rock

Typical profile

A - 0 to 9 inches: mucky silt loam
Bg - 9 to 21 inches: silt loam
Cg1 - 21 to 28 inches: silt loam
Cg2 - 28 to 47 inches: silt loam
Cg3 - 47 to 54 inches: silt loam
Cg4 - 54 to 60 inches: silt loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: Frequent
Frequency of ponding: Frequent
Calcium carbonate, maximum in profile: 5 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water storage in profile: Very high (about 13.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D
Hydric soil rating: Yes

Minor Components

Holderton

Percent of map unit: 10 percent
Landform: Flood plains
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

Hydrologic Soil Group

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

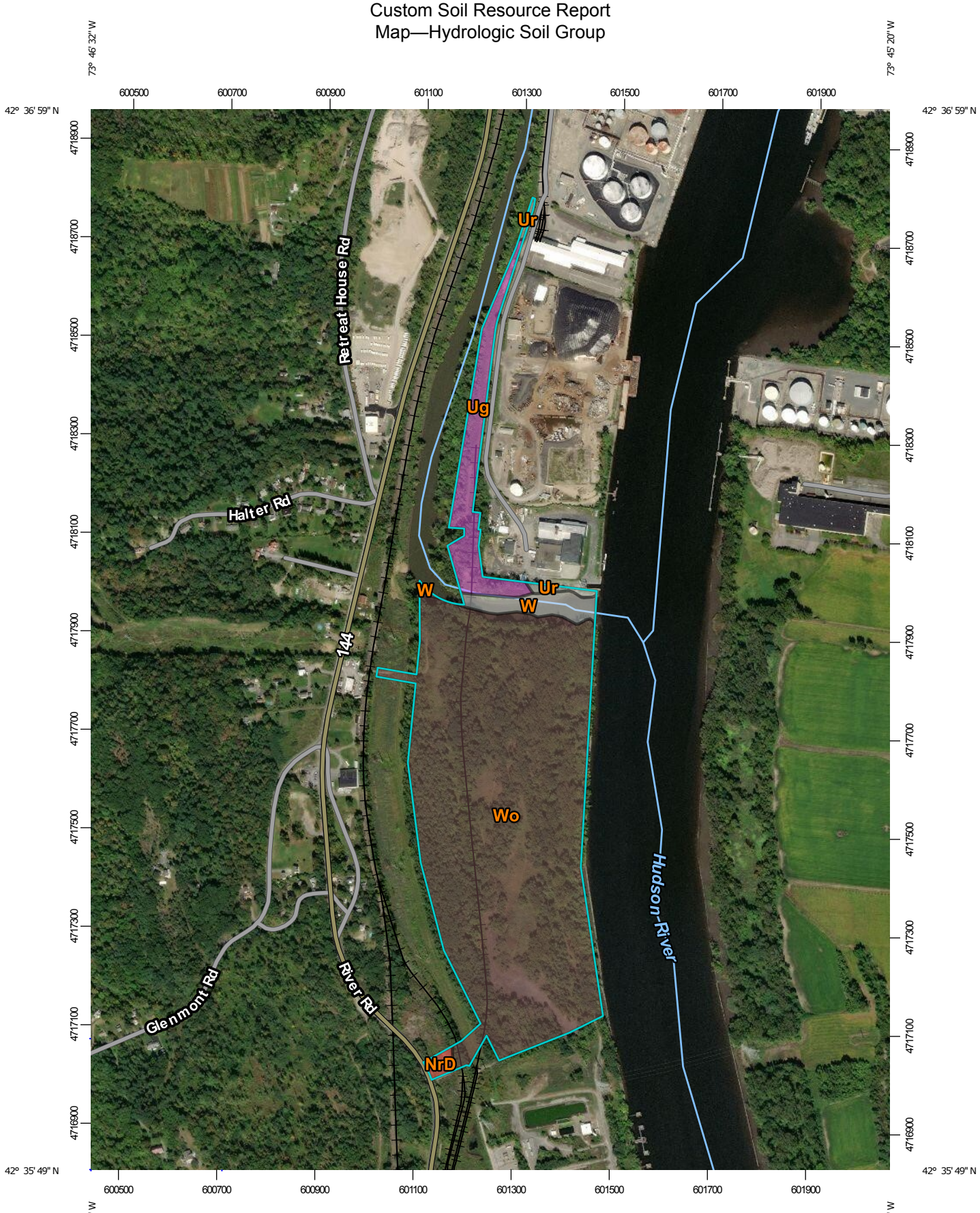
Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Custom Soil Resource Report
Map—Hydrologic Soil Group



Map Scale: 1:10,500 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 150 300 600 900

Feet: 0 500 1000 2000 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Albany County, New York
Survey Area Data: Version 16, Sep 1, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 1, 2014—Sep 22, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
NrD	Nassau very channery silt loam, hilly, very rocky	D	0.6	0.7%
Ug	Udorthents, loamy	A	7.0	8.4%
Ur	Urban land		0.7	0.8%
W	Water		2.9	3.5%
Wo	Wayland soils complex, non-calcareous substratum, 0 to 3 percent slopes, frequently flooded	B/D	72.2	86.6%
Totals for Area of Interest			**83.4**	**100.0%**

Rating Options—Hydrologic Soil Group

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

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Appendix E

Stormwater Management Practices Maintenance Checklists

Stormwater Pond/Wetland Operation, Maintenance and Management Inspection Checklist

Project _____
Location: _____
Site Status: _____

Date: _____
Time: _____

Inspector: _____

Maintenance Item	Satisfactory/ Unsatisfactory	Comments
1. Embankment and emergency spillway (Annual, After Major Storms)		
1. Vegetation and ground cover adequate		
2. Embankment erosion		
3. Animal burrows		
4. Unauthorized planting		
5. Cracking, bulging, or sliding of dam		
a. Upstream face		
b. Downstream face		
c. At or beyond toe		
downstream		
upstream		
d. Emergency spillway		
6.Pond, toe & chimney drains clear and functioning		
7.Seeps/leaks on downstream face		
8.Slope protection or riprap failure		
9. Vertical/horizontal alignment of top of dam “As-Built”		

Maintenance Item	Satisfactory/ Unsatisfactory	Comments
10. Emergency spillway clear of obstructions and debris		
11. Other (specify)		
2. Riser and principal spillway (Annual)		
Type: Reinforced concrete _____ Corrugated pipe _____ Masonry _____ 1. Low flow orifice obstructed		
2. Low flow trash rack. a. Debris removal necessary		
b. Corrosion control		
3. Weir trash rack maintenance a. Debris removal necessary		
b. corrosion control		
4. Excessive sediment accumulation insider riser		
5. Concrete/masonry condition riser and barrels a. cracks or displacement		
b. Minor spalling (<1")		
c. Major spalling (rebars exposed)		
d. Joint failures		
e. Water tightness		
6. Metal pipe condition		
7. Control valve a. Operational/exercised		
b. Chained and locked		
8. Pond drain valve a. Operational/exercised		
b. Chained and locked		
9. Outfall channels functioning		
10. Other (specify)		

Maintenance Item	Satisfactory/ Unsatisfactory	Comments
3. Permanent Pool (Wet Ponds) (monthly)		
1. Undesirable vegetative growth		
2. Floating or floatable debris removal required		
3. Visible pollution		
4. Shoreline problem		
5. Other (specify)		
4. Sediment Forebays		
1.Sedimentation noted		
2. Sediment cleanout when depth < 50% design depth		
5. Dry Pond Areas		
1. Vegetation adequate		
2. Undesirable vegetative growth		
3. Undesirable woody vegetation		
4. Low flow channels clear of obstructions		
5. Standing water or wet spots		
6. Sediment and / or trash accumulation		
7. Other (specify)		
6. Condition of Outfalls (Annual , After Major Storms)		
1. Riprap failures		
2. Slope erosion		
3. Storm drain pipes		
4.Endwalls / Headwalls		
5. Other (specify)		
7. Other (Monthly)		
1. Encroachment on pond, wetland or easement area		

Maintenance Item	Satisfactory/ Unsatisfactory	Comments
2. Complaints from residents		
3.Aesthetics a. Grass growing required		
b. Graffiti removal needed		
c. Other (specify)		
4. Conditions of maintenance access routes.		
5. Signs of hydrocarbon build-up		
6. Any public hazards (specify)		
8. Wetland Vegetation (Annual)		
1. Vegetation healthy and growing Wetland maintaining 50% surface area coverage of wetland plants after the second growing season. (If unsatisfactory, reinforcement plantings needed)		
2. Dominant wetland plants: Survival of desired wetland plant species Distribution according to landscaping plan?		
3. Evidence of invasive species		
4. Maintenance of adequate water depths for desired wetland plant species		
5. Harvesting of emergent plantings needed		
6. Have sediment accumulations reduced pool volume significantly or are plants “choked” with sediment		
7. Eutrophication level of the wetland.		
8. Other (specify)		

Comments:

Actions to be Taken:

Bioretention Operation, Maintenance and Management Inspection Checklist

Project:
Location:
Site Status:

Date:

Time:

Inspector:

MAINTENANCE ITEM	SATISFACTORY / UNSATISFACTORY	COMMENTS
1. Debris Cleanout (Monthly)		
Bioretention and contributing areas clean of debris		
No dumping of yard wastes into practice		
Litter (branches, etc.) have been removed		
2. Vegetation (Monthly)		
Plant height not less than design water depth		
Fertilized per specifications		
Plant composition according to approved plans		
No placement of inappropriate plants		
Grass height not greater than 6 inches		
No evidence of erosion		
3. Check Dams/Energy Dissipaters/Sumps (Annual, After Major Storms)		
No evidence of sediment buildup		

MAINTENANCE ITEM	SATISFACTORY / UNSATISFACTORY	COMMENTS
Sumps should not be more than 50% full of sediment		
No evidence of erosion at downstream toe of drop structure		
4. Dewatering (Monthly)		
Dewaters between storms		
No evidence of standing water		
5. Sediment Deposition (Annual)		
Swale clean of sediments		
Sediments should not be > 20% of swale design depth		
6. Outlet/Overflow Spillway (Annual, After Major Storms)		
Good condition, no need for repair		
No evidence of erosion		
No evidence of any blockages		
7. Integrity of Filter Bed (Annual)		
Filter bed has not been blocked or filled inappropriately		

Comments:

Actions to be Taken:

APPENDIX K

WATER MAIN COMPUTER MODEL

David VanLuven
Town Supervisor

George S. Kansas. P.E.
Commissioner of Public Works

Paul Penman, P.E.
Deputy Commissioner of Public Works/Town Engineer

TOWN OF BETHLEHEM

Albany County - New York
DEPARTMENT OF PUBLIC WORKS
445 DELAWARE AVENUE
DELMAR, NEW YORK 12054
Engineering Division (518) 439-4955 x1135
Fax: (518) 439-5808
Email: ppenman@townofbethlehem.org

July 23, 2019

To: Robert Leslie - Director ED&P
From: Paul Penman, PE – Town Engineer
Keith J. Menia, PE – GIS Coordinator

Reference: Evaluation of Water Distribution Hydraulics
Proposed Port of Albany Site
HTE: 19-00100001

At the Applicant's request, the Engineering Division has performed a hydraulic analysis of the water distribution system for the above referenced development project. The objective of this evaluation was to determine the hydraulic performance of the water system resulting from the proposed development project, identify hydraulic limitations at the concept level and to identify possible strategies to achieve the requested domestic and fire protection flows. While the proposed project is only at conceptual design stages, the hydraulic evaluation aims to identify a working solution. Further refinement as site specific designs are developed is anticipated.

Model Background

The Town of Bethlehem uses a computer-based hydraulic model that simulates the bulk flow of water throughout the distribution system. The hydraulic model was acquired in 2018 and has been maintained to include new development projects as they are constructed and accepted by the Town.

Domestic Demands

Anticipated domestic demands were estimated by the design engineer; McFarland, Johnson as shown below.

Average Day Demand	12 gallons per minute (gpm)	(17,280 gallons per day (gpd))
Max Day Demand	22 gpm	(31,680 gpd)
Peak Hour Demand	47 gpm	

Domestic Demand will be evenly distributed over a 24-hour period and will consist of mainly employee use. Major industrial process water demands were not identified. Also, there is no seasonal variation anticipated.

Needed Fire Flow Demands

The design engineer provided an anticipated combined fire flow rate of 2,300 gpm at 20 pounds per square inch (psi) at the building. The 2,300 gpm fire flow was based off the demand from an

industrial building of similar size (Town of Schodack Distribution Center). After follow-up discussions with the design engineer, the hydraulic simulation would evaluate performance to just upstream of the required master meter. Taking into account an approximate 10 psi loss through the meter and appurtenances, the fire flow evaluation would be modelled using 2,300 gpm at 30 psi at the project site.

Distribution System Overview

The proposed project site has two possible feed directions for public water. The first is an existing 8-inch main that is supplied from the north, commonly referred to as the Corning Hill pressure zone. An existing pressure reducing valve drops the pressure in this zone.

The second pressure zone includes feeds from Glenmont Road and from River Road, both located south of the project site. The Glenmont and River Road pressure zones were combined in 2019. The bulk water movement in this zone is from south to north along River Road. The Glenmont PRV opens during high demand conditions such as fire flows.

Needed Fire Flow Evaluation Methodology

Fire Flow scenarios are designed to determine the maximum available draw rate at given model nodes such that the pressure at any other point in the network does not drop below 20 psi. Additionally, a maximum pipe velocity of 10 feet per second was also factored into the simulation.

For fire flow simulations, the Maximum Day Demand (MDD) model for the Town's entire water system was used as the base condition. Fire flow demand at the project site was added in addition to the domestic water demand flow rates using a fire duration of 120 minutes simulated.

Existing Conditions Max Day Demand (EC-MDD)

Fire flows were simulated at the southernmost terminus of the Corning Hill pressure zone which is located just west of the project site. It was determined that the maximum available flow was 1,000 gpm while still leaving the zone with approximately 24 psi residual pressure. Service from the Corning Hill pressure zone alone would not meet the target Needed Fire Flow of 2,300 gpm.

Fire flows were also simulated at the end of Andres Lane at River Road, drawing water from the Glenmont Road/River Road pressure zone. It was determined that the maximum available flow was 1,300 gpm while still leaving the Glenmont Road area with approximately 21 psi. Service from the Glenmont Road/River Road pressure zone alone would also not meet the target Needed Fire Flow of 2,300 gpm.

In order to meet the Needed Fire Flows for the project, both the Corning Hill and Glenmont/River Road pressure zones would both simultaneously need to contribute to the available fire flow.

Proposed Conditions Max Day Demand (PC-MDD)

For the purpose of the proposed condition evaluation, a single connection to the site was made adjacent to the southern end of the Corning Hill Pressure Zone. A new 12" watermain would need to be constructed from Anders Lane at River Road to the end of the Corning Hill Pressure Zone.

The piping configuration coming into the project site would require a Pressure Sustaining Valve (PSV). This PSV would limit the flow being drawn from the Glenmont Road area, thus maintaining minimum required pressures in that area. The hydraulic model determined that a PSV set at 82 psi would maintain 21 psi, just above the minimum requirement of 20 psi for the Glenmont Road area.

The Glenmont/River Road pressure zone operates on a significantly higher Hydraulic Grade Line than Corning Hill pressure zone. Domestic flow for the project site would originate from the Glenmont/River Road pressure zone.

Under the 2,300 gpm fire flow condition, the service into the site would draw flow from both the Corning Hill and Glenmont/River Road pressure zones.

Conclusion

Domestic and fire protection needs cannot be met solely from the Corning Hill pressure zone or from the Glenmont/River Road pressure zone, but will require the joining of the two feeds.

Flow requirements for the proposed project can be met through extension of the current water distribution system and installation of the pressure sustaining and pressure reducing valves as modeled. The PRV and PSV are required to adequately maintain appropriate pressures in the distribution system both onsite and offsite.

The layout of improvements shown in this hydraulic model are conceptual in nature and will require additional engineering refinement as site specific design plans are developed.

Recommendations

For the purposes of the Environmental Impact Statement, the hydraulic model demonstrates a possible solution to meeting domestic and fire protection needs for the proposed project; however, the solution would require significant improvements to the Town's water distribution system in order to make it viable.

Thank you in advance for your consideration.

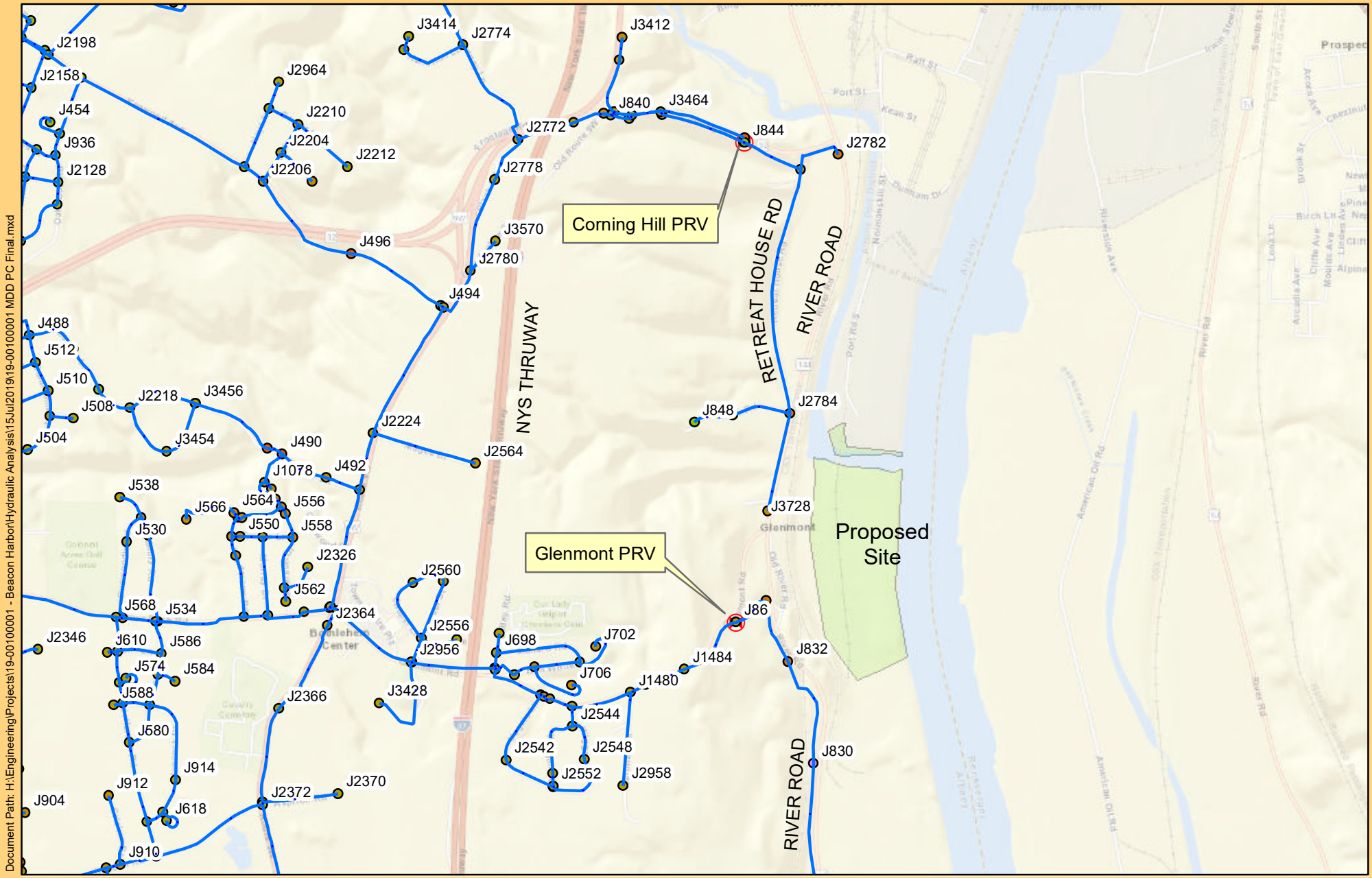
Cc: Matt Hoffman - Assistant Engineer

Attachments:

- Exhibit A, Existing Conditions
- Exhibit B, Existing Conditions Max Day Demand (Normal System Pressures)
- Exhibit C, Max Day Demand Pulling Fire Flows from Separate Feeds
- Exhibit D, Max Day Demand Pulling Fire Flows from Combined Feeds
- Exhibit E, Conceptual Piping Layout (schematic)

Town of Bethlehem, New York
Department of Public Works

Water Distribution Model



Document Path: H:\Engineering\Projects\19-00100001 - Beacon Harbor\Hydraulic Analysis\15Jul2019\19-00100001 MDD PC Final.mxd

Scenario:

Existing Conditions

Distribution System with Node ID's

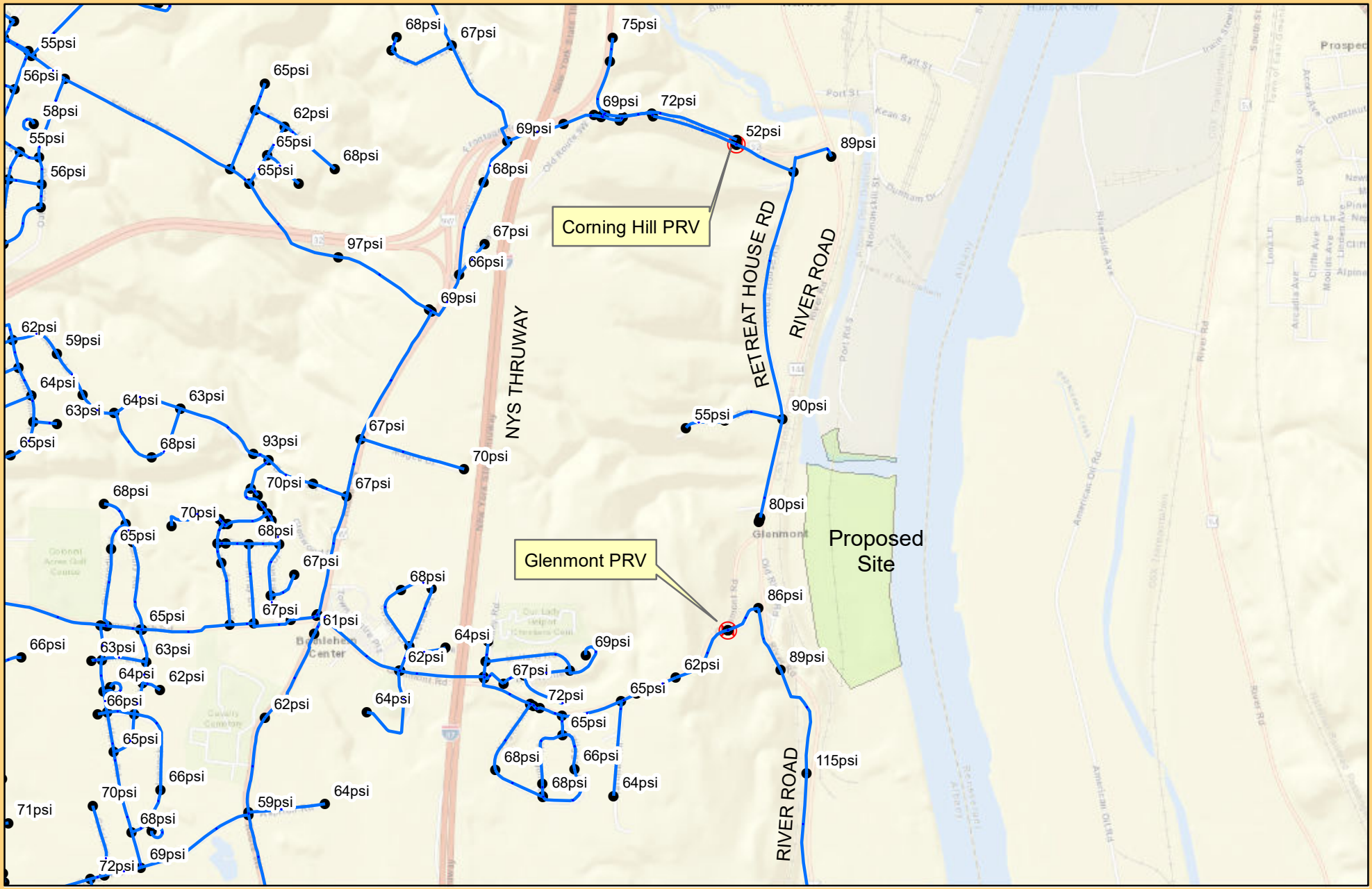
EXHIBIT A

July 15, 2019

By: K. Menia

Town of Bethlehem, New York
Department of Public Works

Water Distribution Model



Document Path: H:\Engineering\Projects\19-00100001 - Beacon Harbor\Hydraulic Analysis\15Jul2019\19-00100001 MDD PC Final.mxd

Scenario:

MDD Existing Conditions

Distribution System with Normal Working Pressures

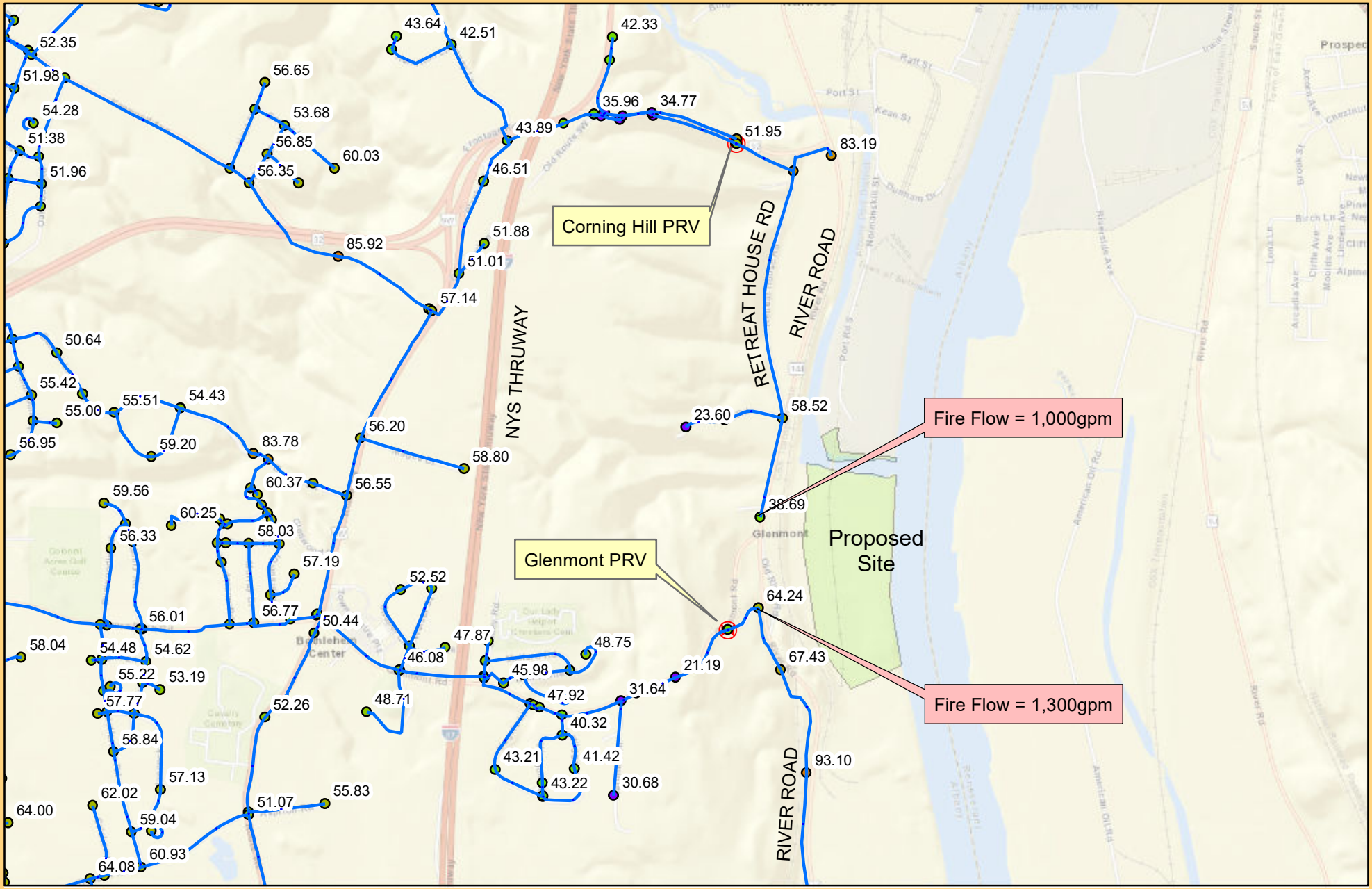
EXHIBIT B

July 15, 2019

By: K. Menia

Town of Bethlehem, New York
Department of Public Works

Water Distribution Model



Document Path: H:\Engineering\Projects\19-00100001 - Beacon Harbor\Hydraulic Analysis\15Jul2019\19-00100001 MDD FF Separate Feeds.mxd

Scenario:

MDD Pulling Fire Flows from Separate Feeds

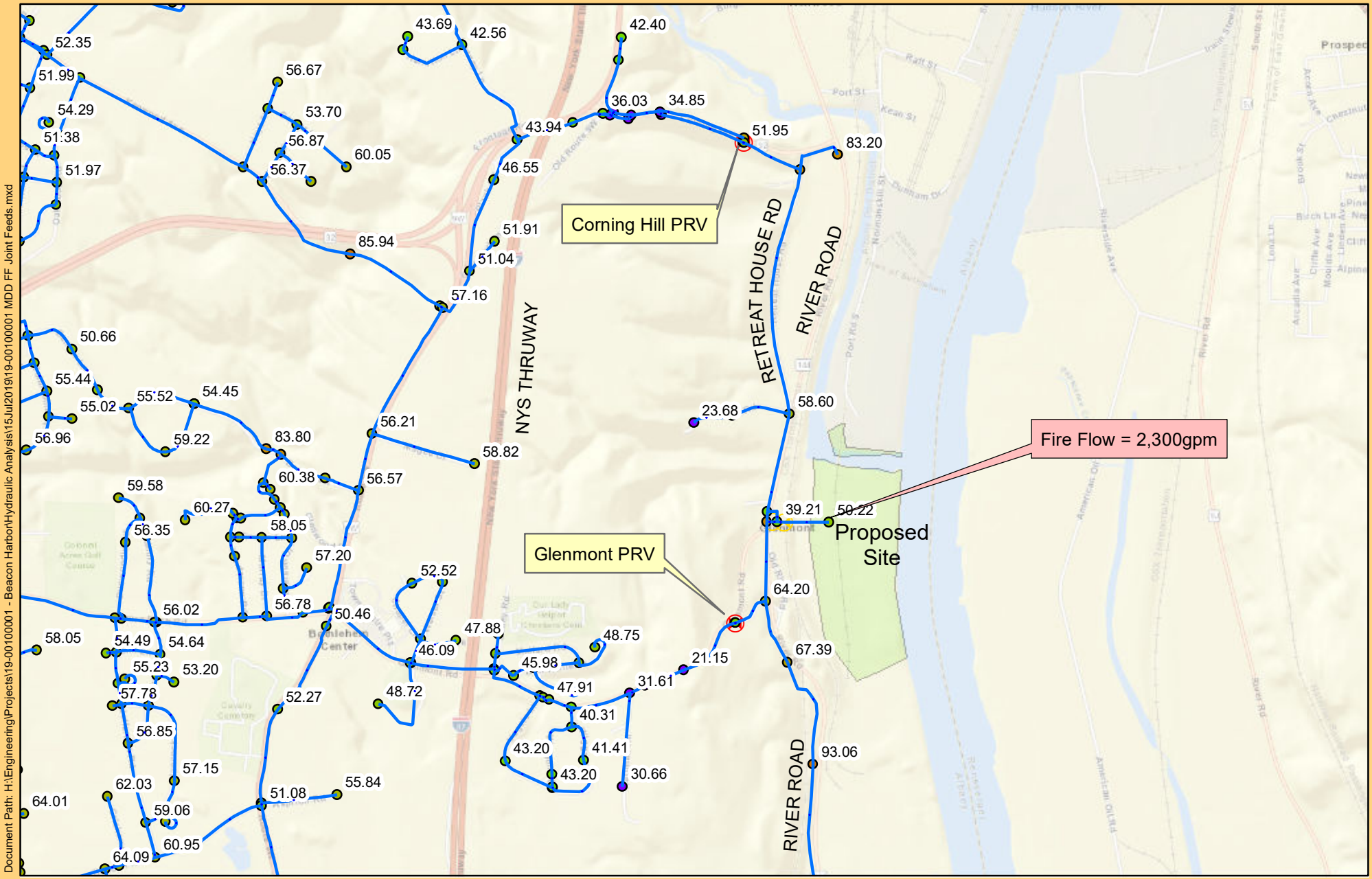
Distribution System Residual Pressures

EXHIBIT C

July 15, 2019
By: K. Menia

Town of Bethlehem, New York
Department of Public Works

Water Distribution Model



Document Path: H:\Engineering\Projects\19-00100001 - Beacon Harbor\Hydraulic Analysis\15Jul2019\19-00100001 MDD FF Joint Feeds.mxd

Scenario:

MDD Pulling Fire Flows from (2) Combined Feeds

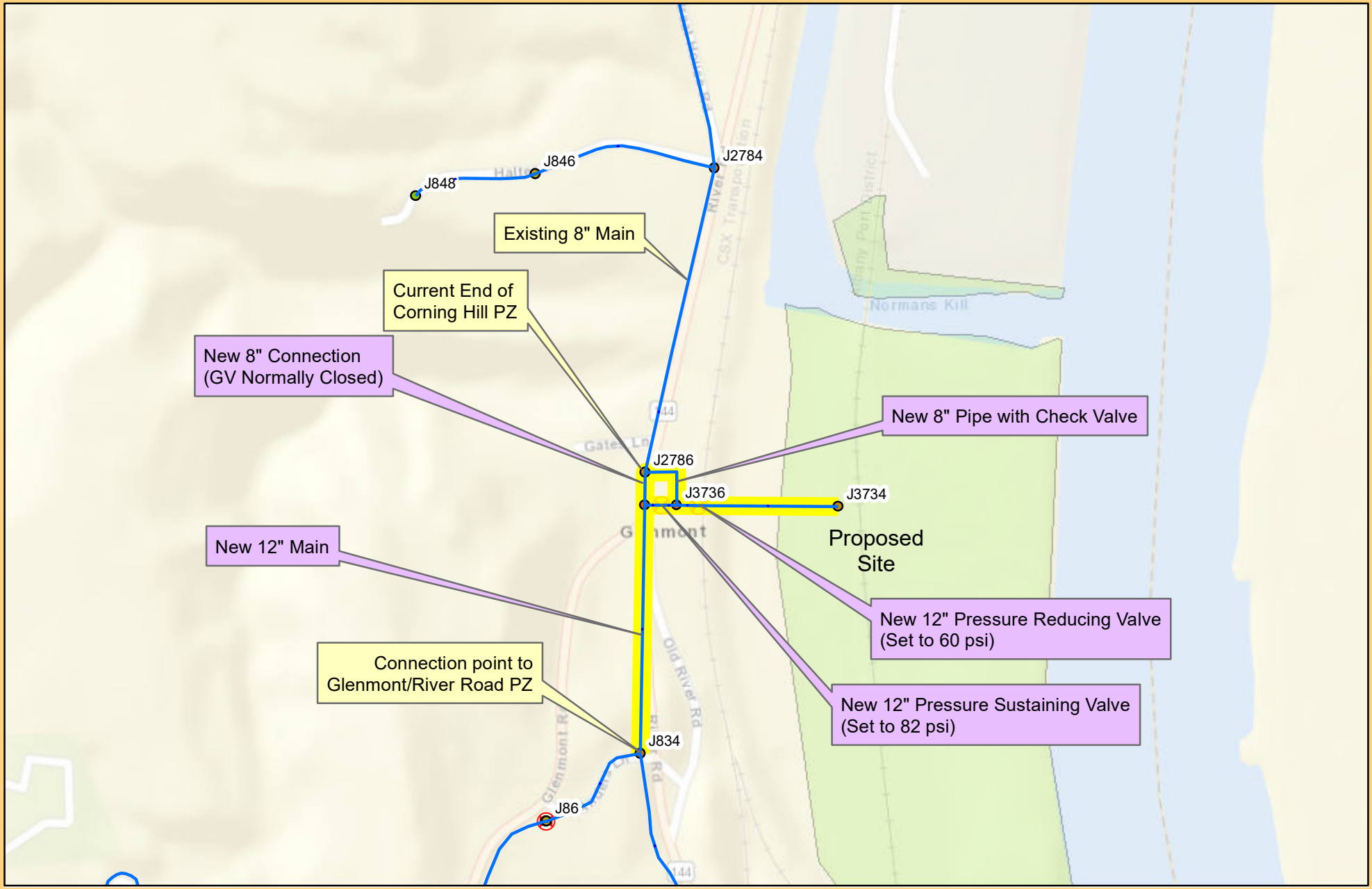
Distribution System Residual Pressures

EXHIBIT D

July 15, 2019
By: K. Menia

Town of Bethlehem, New York
Department of Public Works

Water Distribution Model



Document Path: H:\Engineering\Projects\19-00100001 - Beacon Harbor\Hydraulic Analysis\15Jul2019\19-00100001 MDD Joint Feeds Water Age.mxd

Scenario:

MDD Pulling Fire Flows from (2) Combined Feeds

Conceptual Piping Layout (schematic)

EXHIBIT E

July 15, 2019
By: K. Menia

APPENDIX L

CULTURAL RESOURCES

PHASE 1A
ARCHAEOLOGICAL SURVEY

THE HARBOR AT BEACON POINTE
PROPOSED DEVELOPMENT
TOWN OF BETHLEHEM
ALBANY COUNTY, NEW YORK

Prepared for

O. G. Real Estate Developer LLC
58 Washington Street
Saratoga Springs, New York 12866

Prepared by

Edward V. Curtin
Consulting Archaeologist
627 Maple Avenue
Saratoga Springs, New York 12866

Jessica E. Schreyer, M. A. and Edward V. Curtin, Ph. D.
Report Authors

Karen Carey
Site Files Research

August, 2002

MANAGEMENT SUMMARY

Edward V. Curtin, Consulting Archaeologist, has been retained by Mr. Alan Oppenheim and Mr. Victor Gush of O. G. Real Estate Developer LLC to conduct a Phase 1A archaeological survey of a proposed development called *The Harbor at Beacon Pointe* in the Town of Bethlehem, Albany County, New York. *The Harbor at Beacon Pointe* consists of 77± acres on the east side of River Road, north of the PSE&G Power Facility, west of the Hudson River and south of the present channel of the Normans Kill.

The Phase 1A Cultural Resource Survey was conducted to meet the procedures and information requirements of all federal, state and local regulatory processes. The report content and format follow the standards adopted by the New York Archaeological Council and recommended by the New York State Office of Parks, Recreation, and Historic Preservation.

Several prehistoric and historic archaeological sites are known to occur within a two-mile radius of the project area, often in similar settings to those found within the project area. According to the NYSM site files, Arthur Parker's prehistoric camp site NYSM 7902 is within the project area. Since Parker's sites are vaguely delineated, the exact location of the site is unknown. However, Parker's site is probably either within or near the project area, therefore this area is highly sensitive for prehistoric archaeological sites. Historic maps consulted during this survey indicate the presence of residences near the project area as early as 1767, and within the project area in 1893. As a result of the findings of historic map examinations and the site files search, the project area is considered sensitive for historic archaeological sites. The historic maps also demonstrate the prior existence of islands and channels within the now-filled project area. The former islands areas are the locations sensitive for prehistoric and early historic archaeological sites, as well as late 19th-early 20th century sites. However, former water areas are not considered archaeologically sensitive. Any archaeological sites present may be buried under deep fill.

A complete and comprehensive Phase 1A survey has been performed. A Phase 1B archaeological survey is recommended due to the possible presence of a prehistoric site within the project area according to the NYSM site files, the presence of several historic and prehistoric period archaeological sites within a two-mile radius of the project area, and the presence of map-documented historic structures in and near the project area.

We recommend backhoe trenching to investigate whether deeply buried, culture-bearing horizons exist within the project area. Backhoe trenching will be confined to the former Beacon and Cabbage Islands. Stratigraphic data gleaned from backhoe trenching will determine whether shovel testing or additional backhoe trenching are necessary to complete the Phase 1B survey. If fill is absent or shallow over large areas, an extensive shovel-testing program will be necessary. If deep fill covers intact old land surfaces that may contain archaeological sites, a more extensive backhoe survey will be necessary.

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INTRODUCTION

Project Location and Description

Edward V. Curtin, Consulting Archaeologist, has been retained by Mr. Alan Oppenheim and Mr. Victor Gush of O. G. Real Estate Developer LLC to conduct a Phase 1A archaeological survey of a proposed development called *The Harbor at Beacon Pointe* in the Town of Bethlehem, Albany County, New York. *The Harbor at Beacon Pointe* consists of 77± acres on the east side of River Road, north of the PSE&G Power Facility, west of the Hudson River and south of the present channel of the Normans Kill. This location is depicted on Figure 1.

The Phase 1A Cultural Resource Survey was conducted to meet the procedures and information requirements of all federal, state and local regulatory processes. The report content and format follow the standards adopted by the New York Archaeological Council and recommended by the New York State Office of Parks, Recreation, and Historic Preservation.

Purpose and Scope of Work

The purpose of the Phase 1A Cultural Resource Survey is to identify the presence or absence of reported cultural resources within the project area and evaluate the sensitivity of the project area to contain archaeological sites. The scope of work for this undertaking includes: (1) assessment of the environmental setting and indications of prior disturbance; (2) compilation and interpretation of background information including site files research, map research, and documentary sources; and (3) a report of findings with recommendations.

ENVIRONMENTAL SETTING

The site of the proposed development consists of both open and wooded areas within the maple-beech-hemlock hardwood forest zone (Shelford 1963). Underlying bedrock is part of the Livingston thrust slice, Normanskill group, associated with the Early to Middle Ordovician period. Rock types within the Livingston thrust slice may include graywacke, shale, chert, basalt, siltstone, limestone, dolostone and quartzite (Rogers *et al.* 1990).

The proposed *Harbor at Beacon Pointe* contains the area previously occupied by Beacon Island, part of Cabbage Island, the Hudson River, and Island Creek. Examination of the USGS maps (Figures 1, 7-9) provided in Appendix A offers a diachronic view of the area. At present, *The Harbor* occupies the artificial valley floor on the west side of the Hudson River, with elevations ranging from about 10-30 feet amsl. Soil on the property is classified as Wayland silt loam (Figure 2). This nearly level soil is very deep, poorly to very poorly drained, and is formed in depressions on flood plains along major streams

(Brown 1992). However, the presdence of fill is expected, at least in former channel locations. *The Harbor* is adjacent to both the Hudson River and the artificial mouth of the Normans Kill (see Figure 1). The mouth of the Normans Kill has been rechanneled as a result of 20th century land modification.

PREHISTORIC BACKGROUND

The archaeology of New York State is often treated in three periods, the prehistoric, the protohistoric, and the historic (Curtin 1990). The prehistoric period begins with the first entrance of humans into the region, probably not later than 11,000 years ago, and ends with contacts between Indian and European cultures during the late fifteenth or early sixteenth century. The interval from about AD 1500 to shortly after 1609 (the exploration of Henry Hudson) is the protohistoric period, a century or so during which Indian culture was affected by interaction with the Europeans, but for which there is no written documentation. The historic record as it involves European settlement begins at 1609, with the first Dutch accounts of the region by Hudson, de Laet and others (Jameson 1909). Historic documentation incorporated Indian life more and more after this time. Certainly by the 1630's-1640's the Dutch were providing increasing information about Native American culture (Van der Donck 1968; Gehring and Starna 1988).

The period of concern in this section, 11,000 to 500 years ago, provides a chronicle of human adaptation and significant cultural change within the valley.

The Paleo-Indian (11,500 to 10,000 years ago) is the earliest prehistoric period. Paleo-Indian cultures were adapted to a late glacial environment, probably hunting caribou and possibly other species now locally or globally extinct. The Paleo-Indian way of life seems to have involved mobility over long distances in order to procure food. The earliest Paleo-Indians produced chipped stone artifact assemblages with a diversity of specialized implements, including characteristic fluted or "Clovis" points. Fluted projectile points were also recovered from two locations in West Albany. While one listing provides only that the point was found on a sandy ridge, the location of the other is described as a sandy ridge on the Smith farm along Shaker Road (Ritchie 1957). At the end of the Paleo-Indian period, similar points, usually lanceolate in outline but without the flutes or channels on the blade faces, replaced the fluted points. These unfluted points are often referred to as Plano points, as they are most common in the central, plains region of North America. A Plano point was discovered at the Shaker Run development near the Albany County Airport. (Curtin and Kramer 1990).

By 10,000 years ago the world's temperature had warmed sufficiently for a variety of trees to migrate north, reestablishing forests. As the climate continued to ameliorate, more deciduous tree species became abundant, producing more nuts and browse for the species hunted by ancient Native Americans. Notable among these species are deer, turkey, and passenger pigeon. It is likely that the territories of the hunting and gathering bands decreased as natural productivity increased, reducing the bands' need for high

mobility. A succession of Indian cultures adapted to this improving situation, and readapted when the climate turned colder and wetter about 1000 BC.

The earlier hunting and gathering adaptations of the temperate forest, before the invention of pottery, are called Archaic cultures. The Archaic is divided into three subperiods, Early (10,000-8000 years BP or before the present), Middle (8000-6000 BP), and Late (6000-3000 BP). These divisions generally coincide with distinctive artifacts, especially projectile point types.

The Early Archaic population is usually regarded as relatively small and mobile, adapted to an environment with few nut bearing trees and fish poor waters. Early Archaic artifacts were found at the Goes Farm site near South Bethlehem, about four miles south of the project area (Brewer 1993).

Middle Archaic cultures occupied a land richer in resources as deciduous forests became more fully established, and the increasing stabilization of coastlines and stream gradients, along with ameliorating temperatures, allowed richer aquatic communities to develop. A possible Middle Archaic site was identified at Southgate Commons in the Town of Bethlehem.

Relatively modern climatic conditions were reached by 6000 BP (4000 BC). Late Archaic cultures seem to have exploited smaller, though richer territories as a consequence. A significant cultural change occurring at this time involves a proliferation of projectile point types, both distinguishing the Northeast from other major regions for the first time, and to a lesser extent, dividing the Northeast into several culturally distinctive sub-regions. The geographical distribution of artifact types, either individually or in distinctive assemblages, suggests that interaction within these subregions intensified in comparison to interaction across subregional or regional boundaries. A Late Archaic site was identified in Cedar Hill, about four miles south of the project area (Brewer 1993:9).

Indeed, the record of exchange of exotic materials during the Late Archaic period, largely restricted to small amounts of copper from the Great Lakes and marine shell from the Gulf of Mexico, Chesapeake, and Long Island regions, suggests rather strong insularity. But at the end of this period, during an interval referred to as the Transitional or Terminal Archaic period (1800-1000 BC), exchange across regional and subregional boundaries greatly increased. Terminal Archaic exchange usually involved chipped stone bifaces and projectile points made from quarry sources in Pennsylvania, New York, New Jersey, and southern New England. In fact, distinct patterns seem to characterize this trade, with Pennsylvania jaspers and rhyolites being the materials most often entering the Hudson, upper Delaware, Susquehanna, and Genesee valleys (Ritchie 1971; Funk 1976; Kinsey *et al.* 1972; Trubowitz 1977; Curtin 1984).

Another important stone material exchanged over long distances during the Transitional period is carved steatite or "soapstone" (talc schist), made into usually flat

bottomed, lugged bowls. The identified sources of steatite occur in southern Pennsylvania, Connecticut, and Rhode Island. Near the end of this period, and seemingly at the same time that stone bowls were being produced, baked clay pottery was introduced from the south. The Transitional period has been radiocarbon dated between 1100-1200 BC in the Town of Colonie (Curtin 1991).

Archaeologists identify the introduction of pottery (invented along the Atlantic coast in the southern United States) as the beginning of a new era, the Woodland period. The significance of pottery is that it improved the efficiency of food preparation, helping to buffer against subsistence stresses possibly caused by the cooling climate, or population growth, an effect of increasingly settled life. Early pottery has been radiocarbon dated to about 700 BC at Menands in the Hudson valley near Albany (Funk 1976).

The Early Woodland period in the Hudson valley, as in other coastal and eastern valley areas (Kraft 1986), is dominated by a culture referred to as the Orient phase, which has projectile points that are similar to, although narrower than the Transitional period Susquehanna Broad points. The Orient points are found in association with early (Vinette 1 type) pottery at the Dennis site (Funk 1976) near Menands, as well as the Menands Bridge site (Johnson 1979). One hundred fifteen Orient points were found on the Goes Farm site in Bethlehem (Brewer 1993).

Another Early Woodland culture, the Meadowood phase, also employed Vinette 1 pottery, but traces of this culture are slim in eastern New York. Funk (1976) indicates that during the Meadowood phase chipped stone material was traded into the upper Hudson valley from sources in western New York. Meadowood phase bifacial blades were recovered at the Shaker Run No. 1 site (Curtin and Kramer 1990).

The Meadowood phase seems to post-date the Orient phase at the Dennis site (Funk 1976). But on a broader geographic scale, radiocarbon dates associated with both phases overlap significantly, indicating that these cultures were at least partly contemporaneous. If they were contemporaneous, then the two cultures may have had different adaptations, or at least used the landscape in different ways. For example, even with similar adaptations, the Meadowood culture might have incorporated the upper Hudson in a hunting and gathering strategy involving extended mobility away from a home territory, while populations of the Orient culture made a home within the upper valley.

Alternatively, even though more broadly contemporary, the two cultures may have occupied the upper Hudson region in succession. If the latter process occurred, the evidence from the Dennis site suggests that Meadowood phase settlements may have followed the Orient phase in the upper Hudson valley. However, a lack of data in the region precludes evaluation of these alternative hypotheses.

The Middle Woodland period (100 BC-1000 AD) shows continued long distance exchange, although perhaps with varying strength at different times. There is strong evidence (Funk 1976; Johnson 1979) that certain occupation sites were becoming larger

during this period. Thicker middens were developing (such as at the Ford site, Columbia County), and food storage was becoming a common practice at Hudson River sites such as Tufano, Dennis, Menands Bridge, and Black Rock. Fresh water mussel shells and sturgeon plates are found at several Middle Woodland sites, suggesting that people were exploiting a greater variety of foods, perhaps as another response to stress induced by increasing settlement stability and residential sedentism. These factors could favor population growth due to decreased mobility and shorter intervals between births.

During the Late Woodland period, after about AD 900, another important change occurred: the introduction of corn horticulture. The precise timing of this innovation is not known, but certain discoveries, such as at the Hurley Site, Ulster County (Funk 1976) suggest an agricultural adaptation including food storage was underway by AD 1300. The earliest corn in the region has been found at a transitional Middle-Late Woodland period site (c. 900-1000 AD) on the Roeliff-Jansen Kill (Cassedy *et al.* 1993). The adoption of corn may have continued a trend of subsistence species diversification previously indicated by the increased exploitation of aquatic resources during the Middle Woodland.

Corn horticulture actually became possible in the Northeast following the development of a cold-resistant strain, Northern Flint Corn, sometime between AD 500 and 1000. Northern Flint corn diffused broadly after its first appearance in eastern North America, possibly in the northern Midwest or Northeast. In the Midwest, corn horticulture had been preceded by an intensification of wild seed use, and the domestication of native plants, including the sunflower. One of the most important wild seed plants, possibly involved with early, indigenous domestication, was chenopodium, also known as goosefoot, lamb's quarters, or pigweed. A large number of charred chenopodium seeds was recovered from a prehistoric hearth feature at the Shaker Run No. 1 site, Albany County (Curtin 1991).

The Late Woodland people of the upper Hudson valley were the ancestors of the Mohican Indians. Corn horticulture seems to have encouraged population growth, village life, and warfare among some cultures, such as the Iroquois west of the Hudson valley. It is not known whether similar effects occurred in the Hudson valley, but since Late Woodland village sites have not been documented by archaeologists in this region, chances are that such large, aggregated communities were not often established by the Mohicans or their ancestors. It seems more likely that the late prehistoric peoples of the upper Hudson valley lived in small, dispersed farmsteads or hamlets, in similar fashion to many of the New England Indians (Bender and Curtin 1990; Cronon 1983; Handsman 1990). In addition to earlier artifacts, the Goes Farm in Bethlehem yielded evidence of a sustantial Mohican community. On Papscanee Island, East Greenbush, traces of late prehistoric to contact period Mohican houses have been found (Brewer 1993; Lavin *et al.* 1996)

HISTORIC BACKGROUND

The historic period began with Henry Hudson's exploration in 1609. In 1613, Fort Van Nassau was established on Westerlo Island at the south end of Albany at the present

location of the Port of Albany. At Fort Nassau, a fur trade was established with the local Native Americans.

In 1624, Fort Nassau was abandoned and replaced by Fort Orange, located at the foot of Madison Avenue in Albany (Kimball 1936:17). Prior to the establishment of Fort Orange, most temporary Dutch trading settlements in the area were made in Bethlehem (Parker 1897:486). Kiliaen Van Rensselaer, a Dutch patroon and diamond merchant, ordered the commander of Fort Orange to purchase an estate from the Mohicans thereby establishing the colony of Rensselaerwyck in 1629 (Kimball 1936:18). At its largest, this patroonship was "comprised of 1,000,000 acres-twelve miles north and twelve miles south of Fort Orange along each bank of the Hudson and forty-eight miles wide" (Kimball 1936:21). Eventually conflict arose over trading and settlement rights between the patroon and Petrus Stuyvesant, the Governor of Fort Orange. As a result, Stuyvesant established the town of Beverwyck in 1652 in a 1900-foot radius surrounding the fort (Merwick 1990:73; Kimball 1936:23). Settlers of the patroonship were required to locate outside of these bounds. The Dutch ruled the area until 1664 when Stuyvesant surrendered to the British who changed the name of Fort Orange to Fort Albany. In 1682, Thomas Dongan, an Irishman, became Governor. Albany County was organized under Governor Dongan in 1683.

The project area is in the Town of Bethlehem. Bethlehem was formed from Watervliet on March 12, 1763 and included New Scotland and part of Albany (Parker 1897:487). New Scotland was separated from Bethlehem and formed in 1832 (Brewer 1993:122).

The first permanent settlement in the Town of Bethlehem was made in 1630 by Albert Andriessen Bradt at the mouth of the Normanskill (Parker 1897:486). Other early settlers include William Van Allen, Van Der Zees, Philip Schuyler, Slingerlands, Ten Eyks, Vroomans, Francis Winne, Garret and Jan Van Wie (Parker 1897:487). Westerlo Island was leased to Martin Gerritsen in 1668. By the end of the Revolutionary War, the Irish, Scottish, and English had settled in the area.

The first mill in the Town of Bethlehem was constructed by Albert Andriessen Bradt on the Normanskill soon after he settled there. Other mills, including saw, grist, carding and knitting mills were located in Kenwood and Normansville along the Normanskill (Parker 1897). Despite the presence of early mills along the Normanskill, a general lack of water power in the town along with its close proximity to the city prevented Bethlehem from becoming an important industrial center. However, some industries were established on Westerlo Island. These included the Corning Iron company which was incorporated May 12, 1870. The first iron was produced in the plant in 1871 and its name was changed to the Jagger Iron Company in 1873. The Albany City Iron Company was established on the north side of the Island in 1878 (Parker 1897:460). Moulding sand, used in metal casting was mined in several parts of Bethlehem including Selkirk and Glenmont (Brewer 1993:94; Parker 1897:496). The primary occupation of

early settlers in the town was farming with principle products being wheat, fruit, milk, and livestock.

The First Reformed Protestant Dutch Church was incorporated in 1791 and the first parsonage was built in 1800 on land donated by Stephen van Rensselaer in 1795 (Brewer 1993:123). Christian Bork was the first pastor (Parker 1897:496). The True Reformed Dutch Church of Bethlehem was established in 1822 on Feura Bush Road in Bethlehem Center as a result of differences in doctrine and practice among members of the Reformed Dutch Church (Brewer 1993:127).

The hamlet of Glenmont is located at the intersection of Glenmont Road and Route 144. This area is referred to as "Frazertown" on the 1851 Sydney-Arrot map, probably because the J. Frazer family lived near this intersection during the mid-nineteenth century (Brewer 1993:284). One former landmark of note in Glenmont was the Abbey Hotel ca. 1710, which may have been built by a Van Rensselaer (Brewer 1993:284). The Abbey Hotel existed for about 250 years and was razed in 1961 (Brewer 1993:284). Glenmont is described by Parker (1897) as "a station and post-office on the West Shore Railroad about a mile below Albany. Considerable moulding sand is shipped from here. There are no stores or other business interests in the place."

The Albany and Bethlehem Turnpike, which was an extension of Pearl Street, was incorporated April 9, 1804. The Albany and Delaware Turnpike linking Albany with Otego was established March 2, 1805. The South Bethlehem Plank Road was incorporated in July of 1851. A charter was granted to the Albany, Rensselaerville and Schoharie Plank Road Company March 25, 1859 (Parker 1897:489).

The Albany and Susquehanna Railroad opened in 1863. Two years later, the Athens and Saratoga Railroad opened. A branch of this railroad ran from Ravena to Albany along the river.

SITE FILES RESEARCH

The archaeological site files of the New York State Museum (NYSM) and the Office of Parks, Recreation, and Historic Preservation (OPRHP), both of which are maintained at OPRHP, were reviewed in order to identify whether archaeological resources have previously been reported within the project boundaries. According to the site files of the NYSM, a prehistoric camp site reported by Arthur C. Parker (NYSM 7902) falls within the bounds of the project area. Table 1 summarizes archaeological sites and artifact finds that have been recorded within a two-mile radius of the project area.

Table 2: Archaeological sites and artifact finds recorded within a two-mile radius of the project area

NYSM Sites	NYS OPRHP Sites	Description
	A00102.000006	Van Wie's Point & Dock. Constructed during the 1820's by Peter G. and Henry Van Wie. River freighting terminal, and settlement location that threatened to be greater than Fort Orange (Albany) for a time. Hendrick Gerritse Van Wie came to Fort Orange from Holland in 1664 and built house here in 1679. Six generations lived in area, including another Hendrick Van Wie who built a house in 1732, and Peter & Henry Van Wie who established the river dock early in the 19th century. Vast quantities of hay, farm produce and ice was shipped from Van Wie's dock. The dock was used for a while in 1835 by the Hudson River Steamboat Co. as their Albany Terminus. Apparently, river navigation was impaired at the time. Richard S. Allen.
	A00102.000176	Native American Heritage site. Undisturbed lithic (flakes) deposit. No temporal or cultural affiliation. Recovered from shovel test 0-10 cm below ground surface.
	A00102.000177	Native American Heritage site. Isolated find of one flake from plow zone.
	A00102.000189	SC prehistoric Site 1. Camp, workshop. Artifacts found include two gray chert flakes and one gray chert core fragment. Reported by Sarah Majot.
	A00102.000190	SC Prehistoric Site 2. Camp, workshop. Artifacts found include three gray chert flakes and one gray chert core fragment. Reported by Sarah Majot.
	A00102.000191	SC Prehistoric Site 3. Camp, workshop. Artifacts found include two gray chert flakes. Reported by Sarah Majot.
	A00102.000192	SC Prehistoric Site 4. Camp, workshop. Artifacts found include one gray chert side notched projectile point. Reported by Sarah Majot.
	A00102.000193	SC Prehistoric Site 5. Artifacts recovered include Normanskill projectile point, four chert flakes and a core fragment. Reported by Sarah Majot.

	A00102.000194	Historic Middens. This site description includes at least two wells and several small middens with materials that appear to date from the middle of the 19th century through the 20th century. Most visible artifacts suggest dates circa 1870-1920. These include typical household and farm goods.
	A00102.000206	TGP site 4. Retouched flake. Reported by Tracy L. Millis.
	A00140.000355	Site of Glen Curtiss " take off." This site is important to aviation history. Glen H. Curtiss (1878-1930), the New York State aviation pioneer, began his first long distance airplane flight from this spot on 5/29/1910. Reported by Richard S. Allen.
	A08303.000007	Widow Bries House. ca. 1722. Reported by Paul Huey.
	A08303.000009	Van Buren Site. Woodland or Early Historic. Flakes, pottery, tool fragments. Reported by Archaeological Research Specialist.
	A08303.000050	Goldkrest site. The Goldkrest site is the remains of a late-prehistoric component dating to the late fifteen/early sixteenth centuries. The site probably represents and occupation of the people know as the Mahicans. Artifacts recovered include 46 Aboriginal pottery sherds, 43 lithic artifacts, 3 fire-cracked rocks and an intact feature.
	A08303.000052	Teunis Dircksen van Vechten site, ca. 1639-1680's. Artifacts found include scattered stone and red brick fragments.
	A08303.000053	Van Buren Eastern site. Early Dutch artifacts. Reported by Archaeological Research Specialist.
	A08303.000054	Rut Van Deusen House site. Reported by Paul Huey.
	A08303.000055	Kos Verloren House site. Reported by Paul Huey.
	A08303.000056	Teuntje Van Buren House site, ca. 1729. Reported by Paul Huey.
	A08303.000058	Volkert P. Douw's House site, ca. 1770-1780. Reported by Paul Huey.
	A08303.000061	S. Sheerer House site, ca. 1850. Artifacts found include bottles, whiteware, ironstone, 19th century salt glazed stoneware and foundation stones. Reported by Paul Huey.
	A08303.000072	Sterling Organics 3 site. Prehistoric/ 17th century.
	A08341.000003	Douw's Point. House site dating to ca. 1717-1724 and distillery dating to ca. 1750-1775. Reported by Paul Huey

353		Rockefeller, ALB 24-4. Reported by E. Sheehan.
354		Greenbush, ALB 38-4. Reported by E. Sheehan.
355		Glenmont Abbey Hotel, Glenmont.
356		Bethlehem, ALB 35-4, ACP ALBY 35. Reported by E. Sheehan and Arthur C. Parker.
369		Hecox. Prehistoric and historic mixed in excursion boat landing fill. Reported by R. E. Funk.
1635		East Greenbush Quarry, TRY 3-3. Reported by Ed. Christman.
1636		Mound, possibly natural, found on old site file 1950 Troy 15 Minute Quad and labeled "mound-like feature."
2777		No name. Campsite. Artifacts found include large flints, gorgets and hammerstones. Reported by Arthur C. Parker.
2786		ACP ALBY 36A. Camps. Reported by Arthur C. Parker.
7564		No information.
7565		No information.
7902		ACP ALBY 36B. Camp. Reported by Arthur C. Parker.

Several historic and prehistoric sites have been recorded within a two-mile radius of the project area. As mentioned, the NYSM site files show a prehistoric camp site (NYSM 7902) within the bounds of the project area. Although the NYSM site files show that NYSM 7902 encompasses the entire project area, this is among the large group of NYSM sites that are vaguely delineated, and the exact location of the site is unknown. However, this site is either within or near the project area. Therefore, this area is highly sensitive for prehistoric archaeological sites.

PREVIOUS RESEARCH

The following archaeological surveys were performed in the project vicinity. OPRHP sites identified by these surveys are enumerated by report in this list.

Archeological Research Specialist

1997 Stage III Archaeological Investigation: The GoldKrest Site, CNG TL 470, East Greenbush, New York.

A08303.000050 P Delmar

1993 Phase IA and IB Archaeological Assessment Report for the CNG TL-470 Pipelined Crossing Project RE-Routes, East Greenbush New York.

A08303.000009 H/P Delmar

A08303.000053 H/P Delmar

Archeological Research Specialist
1993 Stage II Archeological Assessment Report for the CNG TL 470 Pipeline Crossing Project, East Greenbush, Rensselaer, GoldKrest Site
A08303.000050 P Delmar

Collamer & Associates
1994 Phase 1 (SEQR) Cultural Resource Investigations for Southgate Commons, Town of Bethlehem, Albany County, New York.

Lucianne, Lavin & Marina Mozzi
1990 Phase IA/IB Archaeological Assessment Report for the CNG TL-470 Pipeline Crossing Project, East Greenbush, New York.

Meyer, Scott B., Braun Intertec
1993 Phase I, Reconnaissance Level Archaeological Survey, CNG Transmission Corporation, Proposed Pipeline Project. (TL-470XI)
A00102.000176 P Delmar
A00102.000177 P Delmar

Millis, L., Todd Cleveland
1998 Stage I Cultural Resource Survey of the Proposed 2.7-Mile Niagara Mohawk Pipeline, Town of Bethlehem, Albany County, New York.

The 106 Group LTD.
1994 Addendum to 1993 Report, Phase I Reconnaissance Level Archaeological Survey for the CNG Transmission Corporation, Proposed Pipeline Project (TL-470XI). Seven Extra Work Spaces.

MAP RESEARCH

The maps listed below were consulted to identify possible historic sites. As discussed in the environment section, these maps show the existence of islands and channels in the project area. The configuration of these landscape features has changed over time, as shown on the series of maps in Appendix A.

Map Date	Map Description
1767	Map of the Manor of Rensselaerwick by J. R. Bleecker (Figure 3).
1851	Sidney/Arrot Map of Bethlehem (Figure 4).
1854	Map of Bethlehem by Jay Gould (Figure 5).

1866	New Topographical Atlas of the Counties of Albany and Schenectady, New York. S. N. and D. G. Beers (Figure 6).
1893	USGS 15 Minute Albany Quadrangle (Figure 7).
1927	USGS 15 Minute Albany Quadrangle (Figure 8).
1950	USGS 15 Minute Albany Quadrangle (Figure 9).

MAP DOCUMENTED STRUCTURES

Map documented structures appear near the project area as early as 1767. Names associated with nearby structures on various historic maps include J.B. Nott, Gerrit Vandenbergh, P. Wendell, S.M. Parks, Wm. Sibble, J. Frazier, J. McGill, A. Patterson, and The Abbey Hotel. The site of the former Gerrit Vandenbergh residence (ca. 1750) is located on the low bluffs east of River Road, overlooking the south end of the project area. The Wendell family owned the former Gerrit Vandenbergh residence during the 1800s (Dunn and Bennett 1996).

Historic maps indicate a structure within *The Harbor* as early as 1893. This structure is located on the south end of Beacon Island. On the 1927 USGS Quadrangle, fifteen structures appear along the eastern coast of combined Cabbage and Beacon Islands. Six of those fifteen structures fall within *The Harbor*.

ARCHAEOLOGICAL SENSITIVITY

Several prehistoric and historic archaeological sites are known to occur within a two-mile radius of the project area, often in similar settings to those found within the project area. According to the NYSM site files, Arthur Parker's prehistoric camp site NYSM 7902 is within the project area. Since Parker's sites are vaguely delineated, the exact location of the site is unknown. However, Parker's site is probably either within or near the project area. Therefore, this area is highly sensitive for prehistoric archaeological sites.

Historic maps consulted during this survey indicate the presence of historic sites near the project area as early as 1767, and within the project area in 1893. As a result of the findings of historic map examinations and the site files search, the project area is considered sensitive for historic archaeological sites.

Since the proposed *Harbor at Beacon Pointe* is located on former islands just south of Albany, it is particularly sensitive for prehistoric and early historic archaeological sites. In addition, the presence of structures on the 1893 and 1927 USGS maps suggests that late 19th to early 20th century sites may also be present. Since part of the project area

was formerly part of two Hudson River islands, potential sites may be covered by both recent alluvial deposition and fill that was used to modify the landscape. Therefore, this area is sensitive for buried sites.

PHASE 1A RESULTS AND RECOMMENDATIONS

A complete and comprehensive Phase 1A survey has been performed. A Phase 1B archaeological survey is recommended due to the possible presence of a prehistoric site within the project area according to the NYSM site files, the presence of several historic and prehistoric period archaeological sites within a two-mile radius of the project area, and the presence of map-documented historic structures in and near the project area.

We recommend backhoe trenching to investigate whether deeply buried, culture-bearing horizons exist within the project area. Backhoe trenching will be confined to the former Beacon and Cabbage Islands. Stratigraphic data gleaned from backhoe trenching will determine whether shovel testing or additional backhoe trenching are necessary to complete the Phase 1B survey. If fill is absent or shallow over large areas, an extensive shovel-testing program will be necessary. If deep fill covers intact old land surfaces that may contain archaeological sites, a more extensive backhoe survey will be necessary.

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APPENDIX A: FIGURES

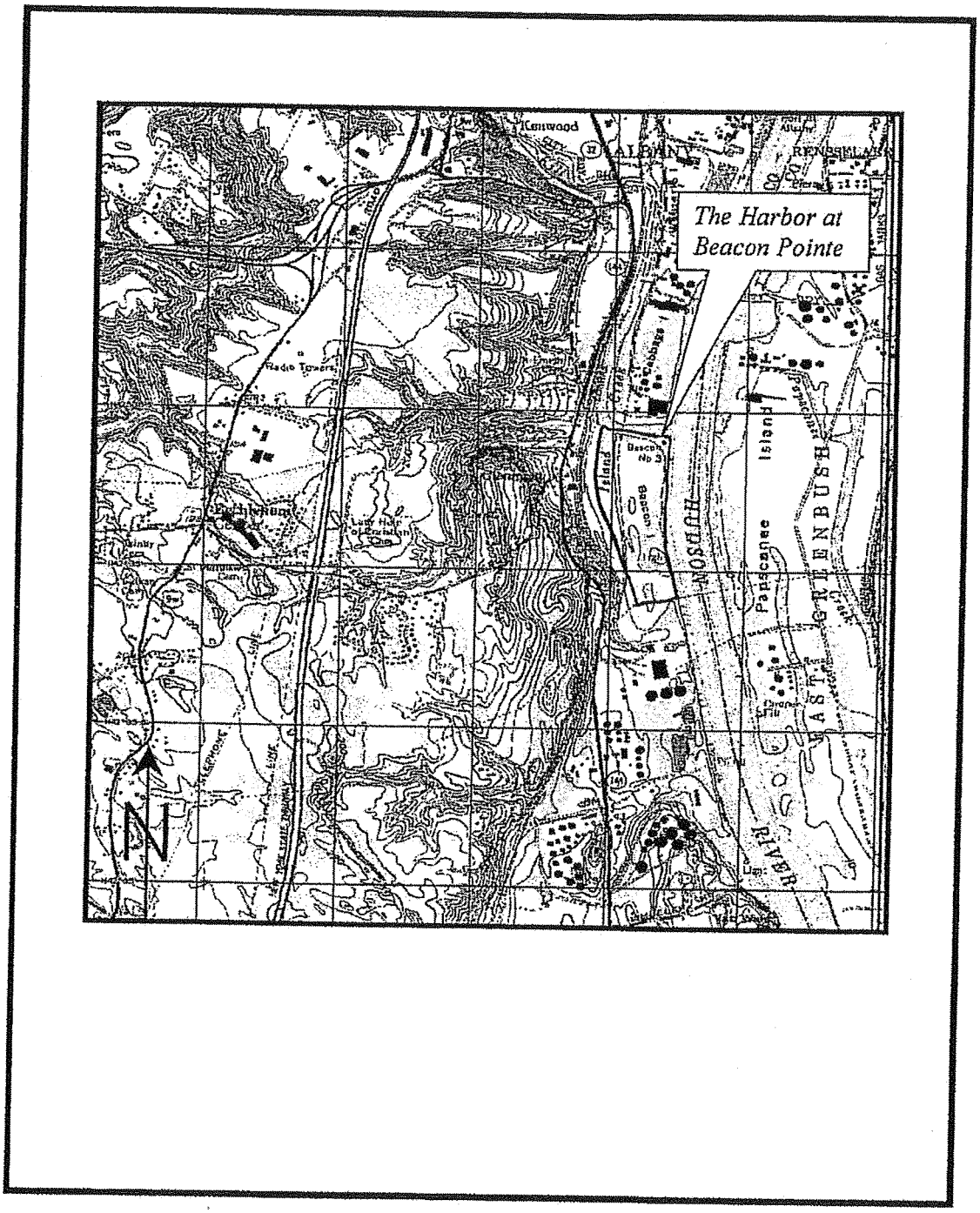


Figure 1: USGS 7.5 Minute Delmar Quadrangle.

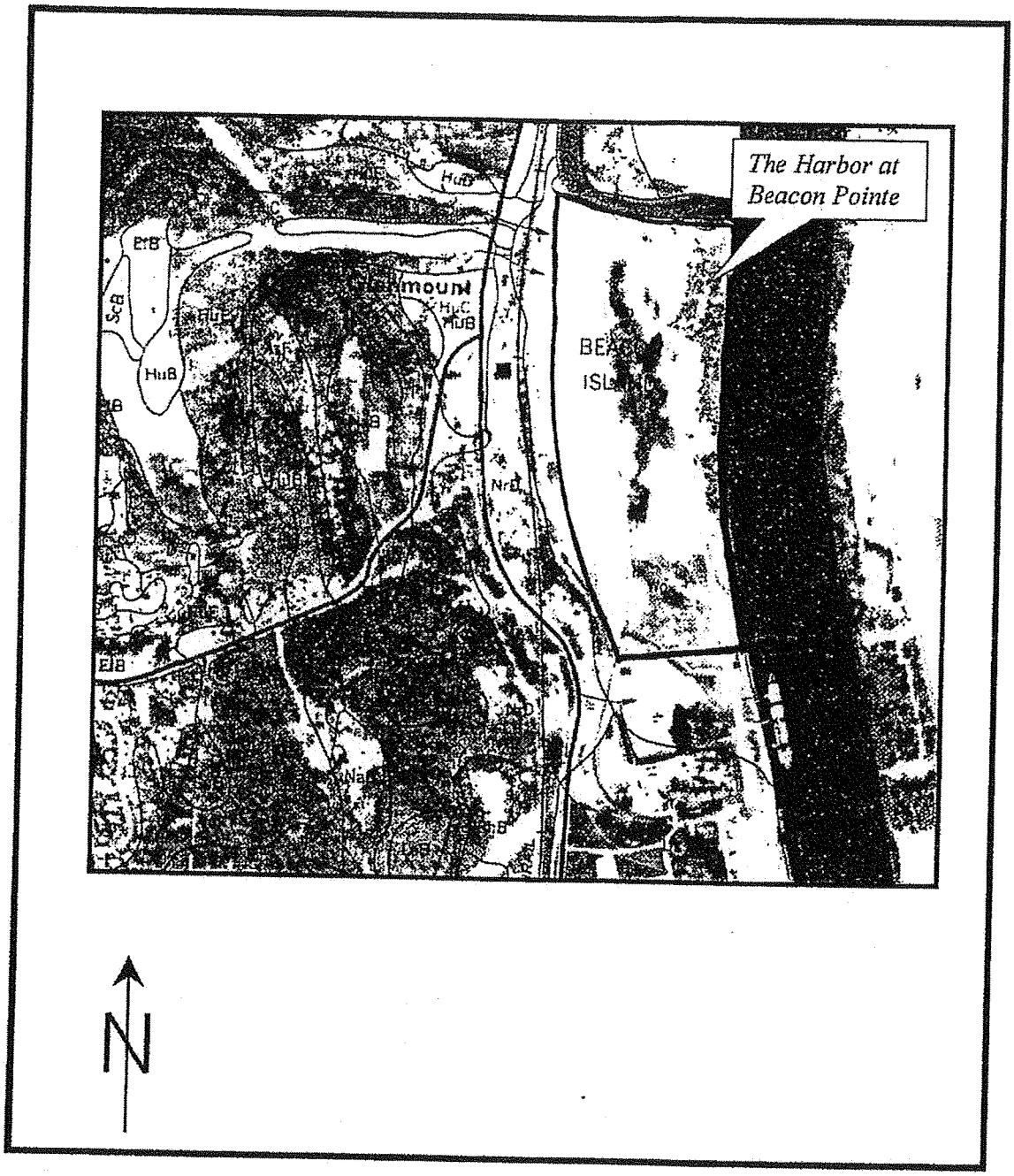


Figure 2: USDA Soil Survey from Brown (1992).

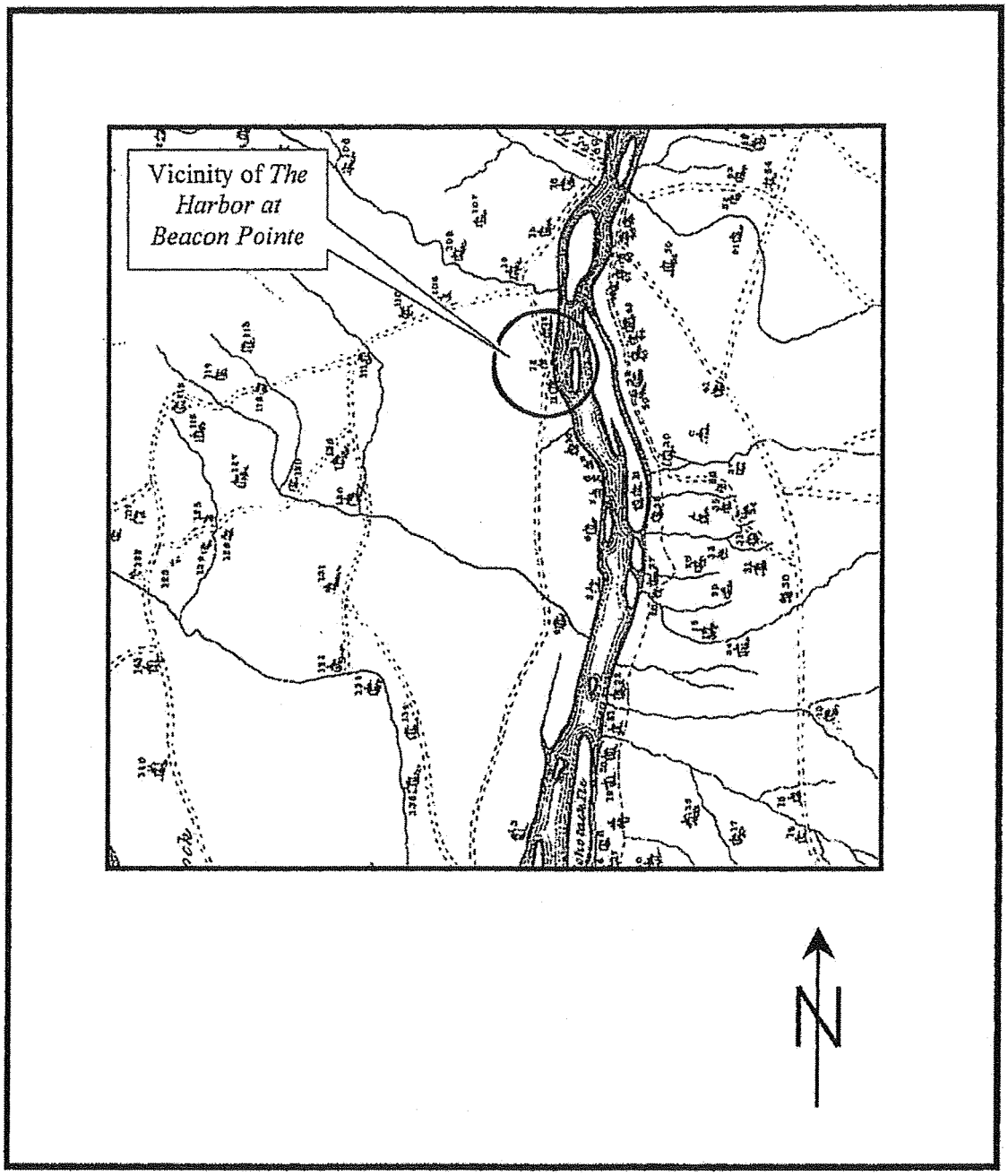


Figure 3: 1767 Bleeker map of the Manor Rensselaerwyck, from Dunn and Bennett (1996).

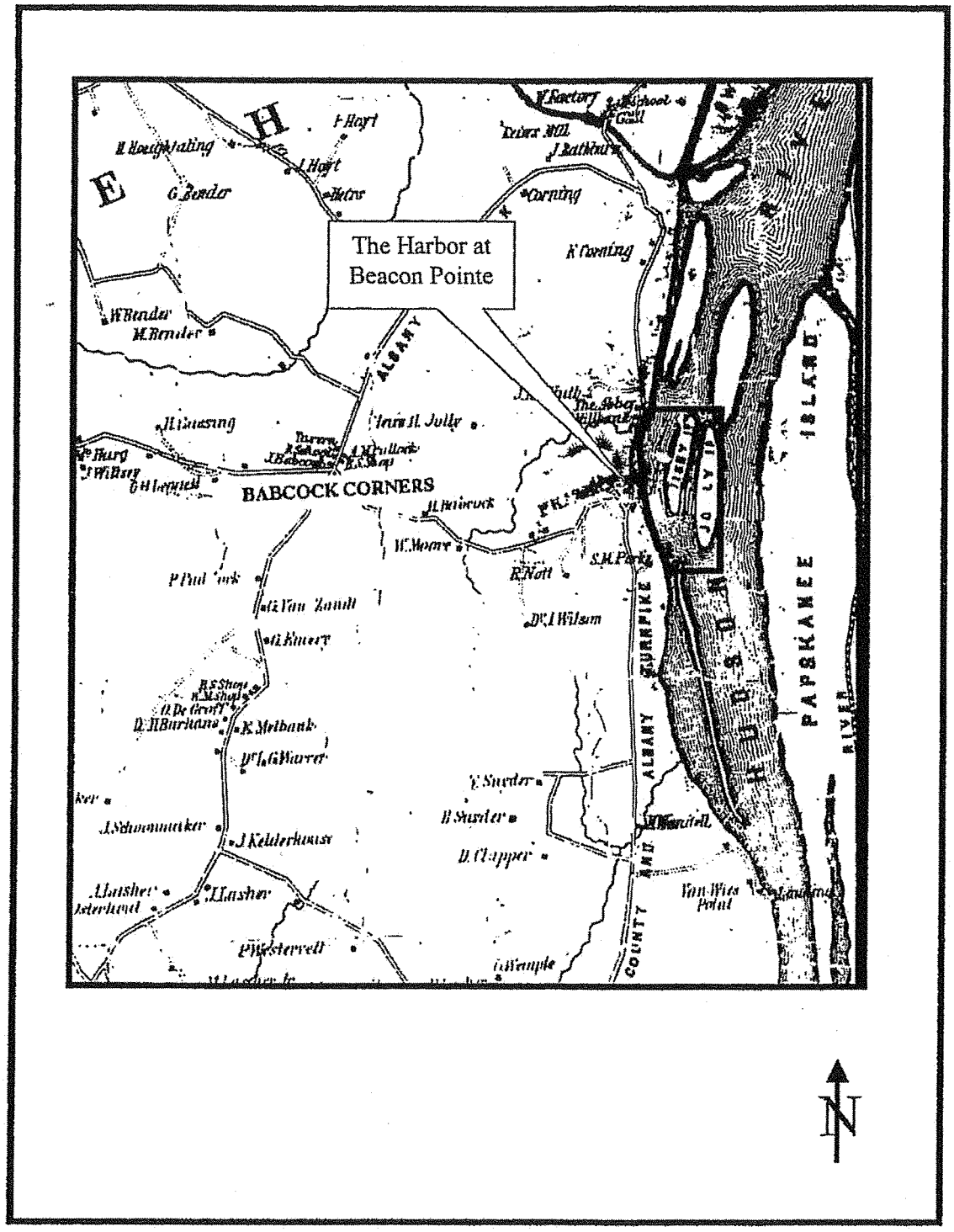


Figure 4: 1851 Sydney/Arrot map, from Brewer (1993).

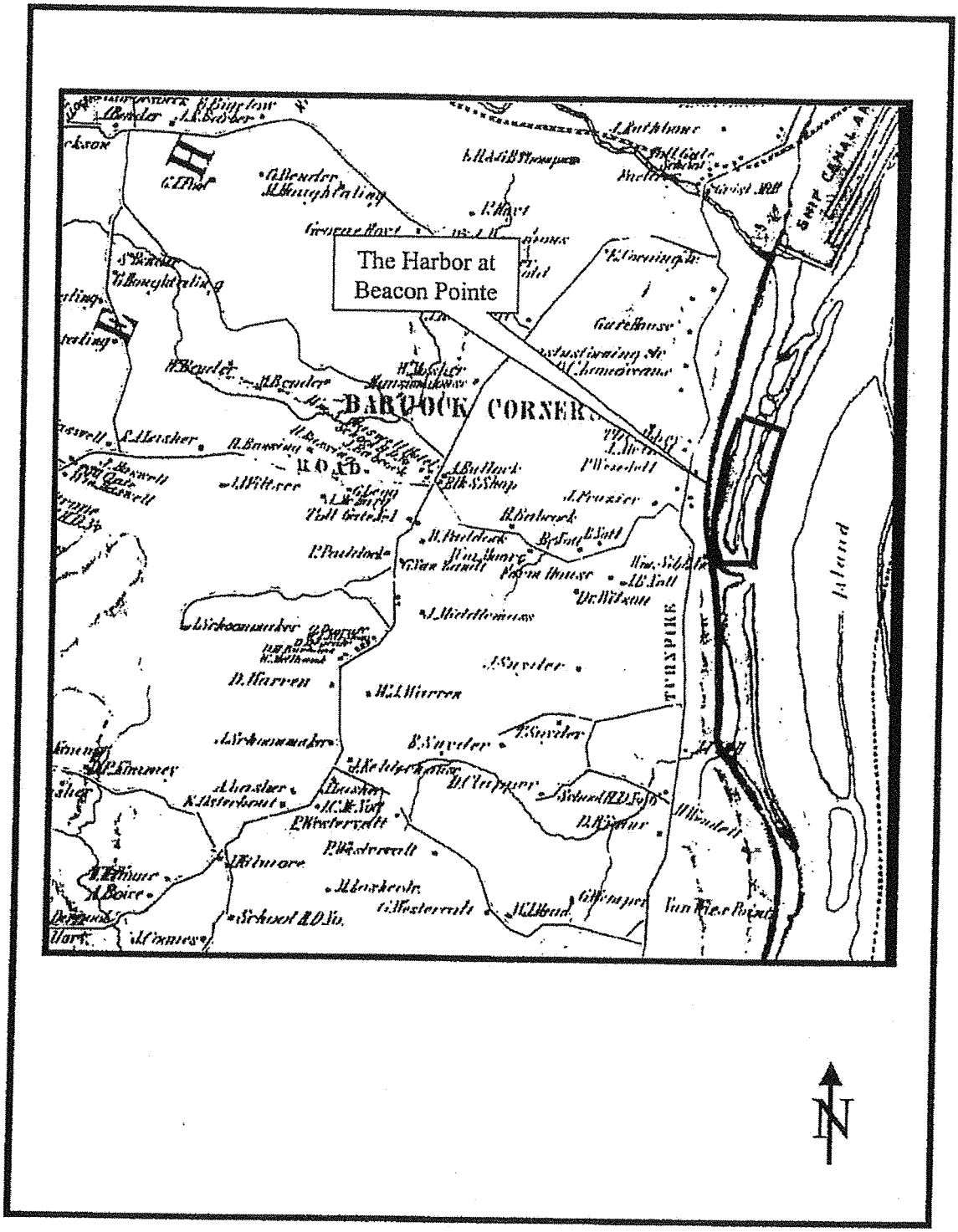


Figure 5: 1854 Jay Gould map, from Brewer (1993).

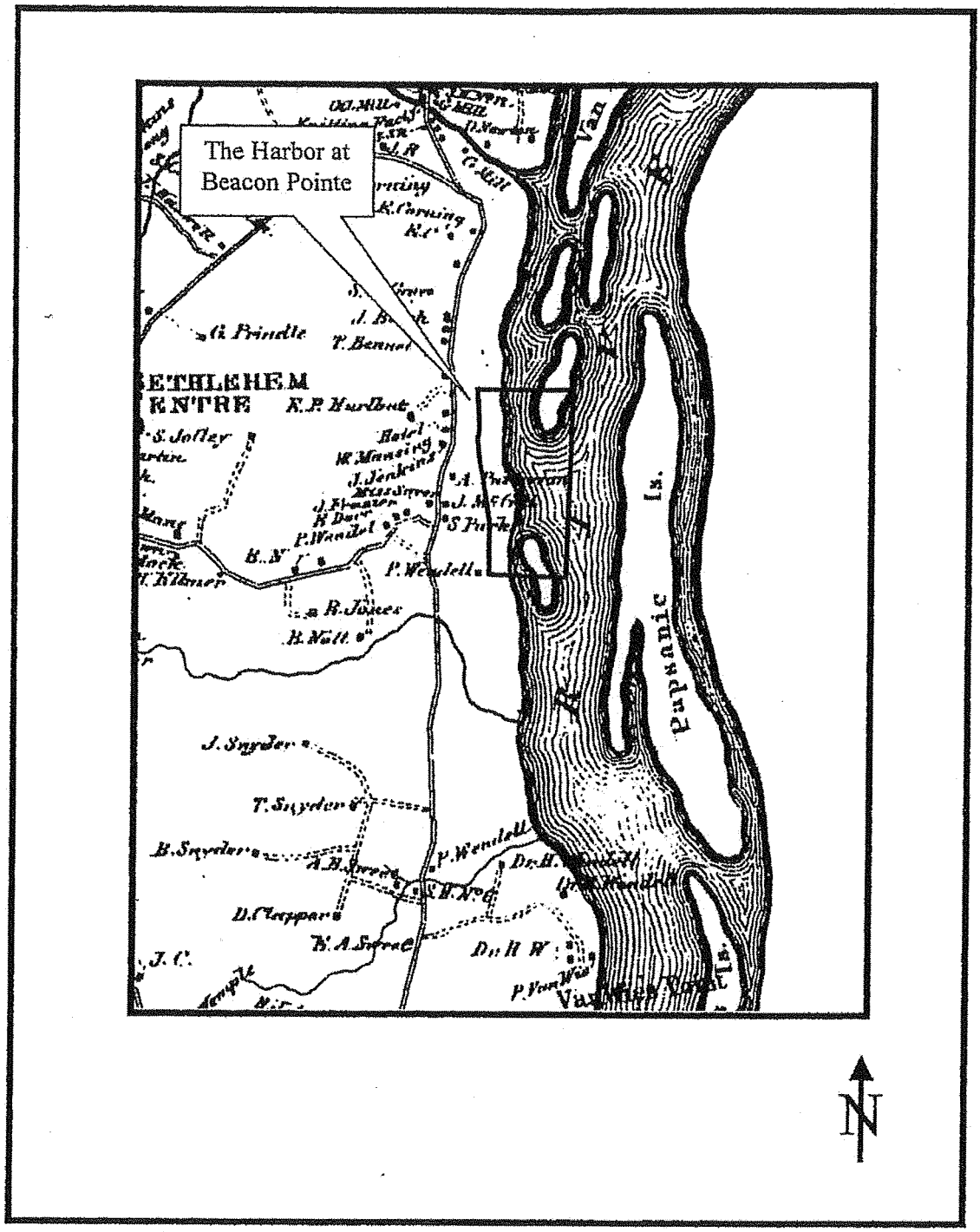


Figure 6: 1866 Beers map, from Brewer (1993)

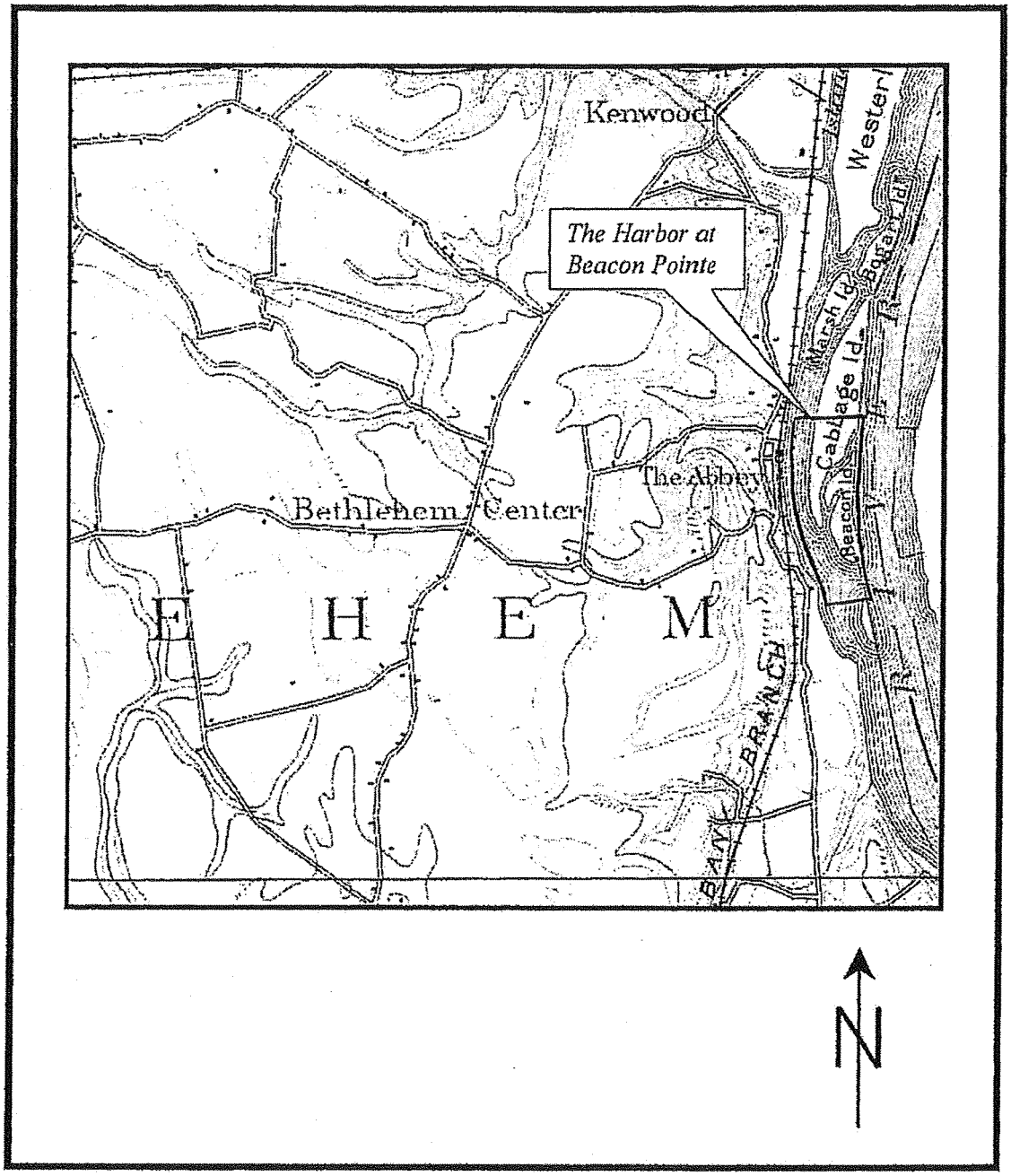


Figure 7: 1893 USGS 15 Minute Albany Quadrangle.

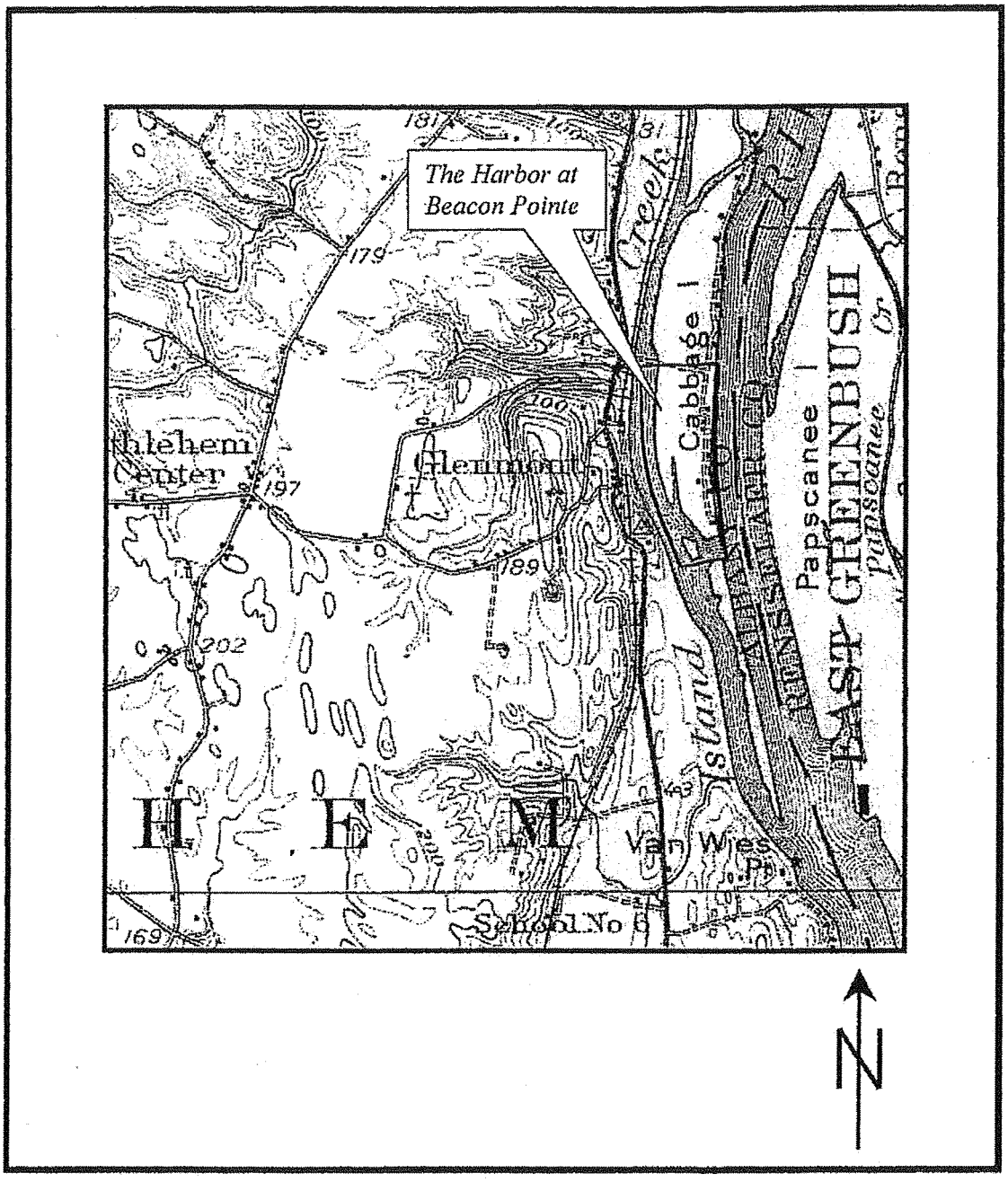


Figure 8: 1927 USGS 15 Minute Albany Quadrangle.

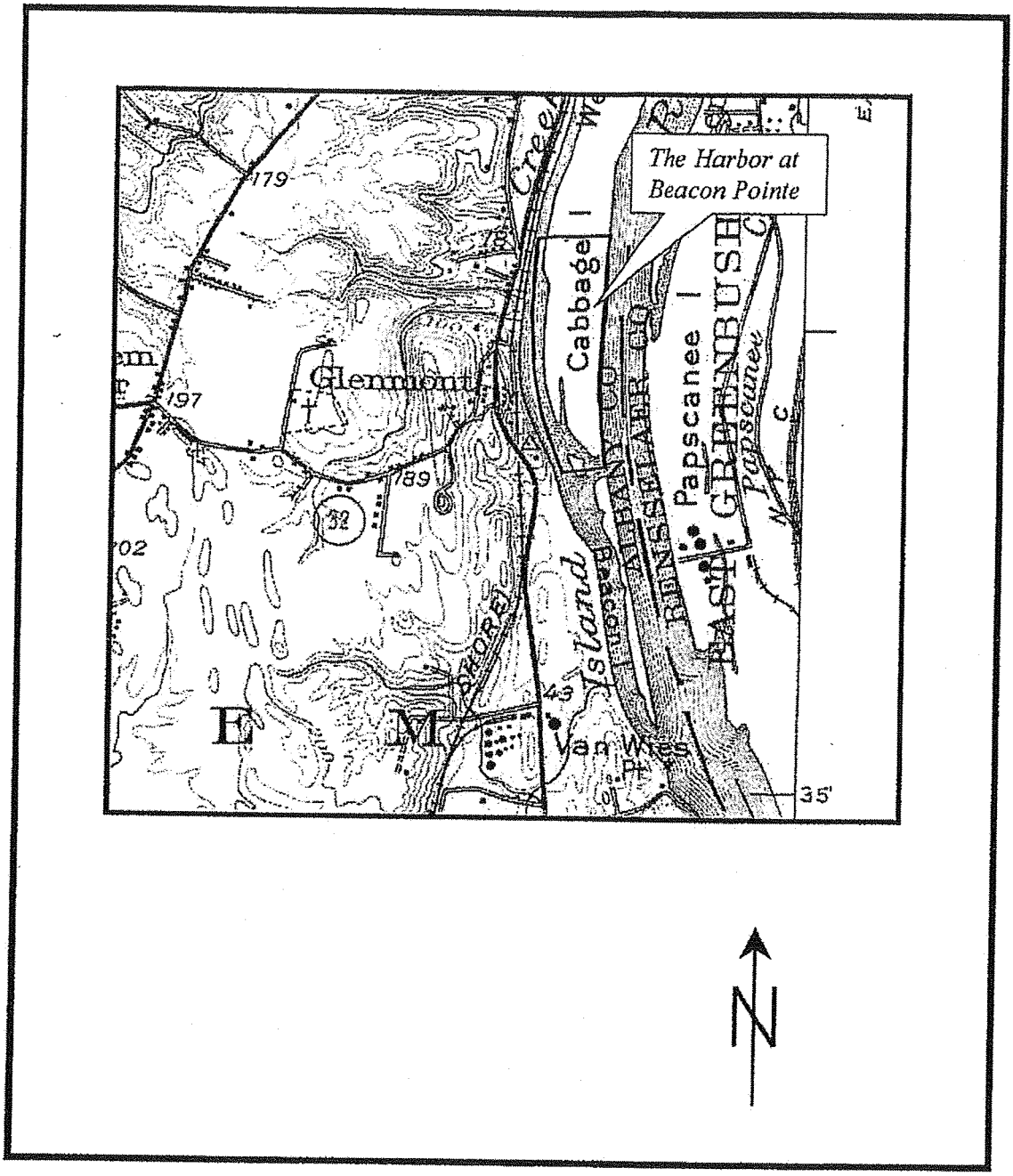


Figure 9: 1950 USGS 15 Minute Albany Quadrangle.

APPENDIX B: PHOTOGRAPHS



Photo 1: The Niagara Mohawk corridor, formerly Island Creek, facing north.



Photo 2: Typical vegetation near the edge of the Hudson River, facing south from the footpath running along the northern boundary.



Photo 3: An example of a low-lying area in the southern end.



Photo 4: Present mouth of the Normans Kill, facing north.

PHASE 1B
ARCHAEOLOGICAL SURVEY

THE HARBOR AT BEACON POINTE
PROPOSED DEVELOPMENT
TOWN OF BETHLEHEM
ALBANY COUNTY, NEW YORK

Prepared for

O. G. Real Estate Developer LLC
58 Washington Street
Saratoga Springs, New York 12866

Prepared by

Edward V. Curtin
Consulting Archaeologist
627 Maple Avenue
Saratoga Springs, New York 12866

Edward V. Curtin, Ph. D. and Jessica E. Schreyer, M. A.
Report Authors

November, 2002

MANAGEMENT SUMMARY

This report has been prepared pursuant to the recommendation of the Phase 1A archaeological survey (Schreyer and Curtin 2002). This recommendation was for backhoe testing of the project area, as deep fill was reported over the area. Formerly, two islands had occupied the area, as well as the south channel of Normanskill-Hudson confluence. The goal of the archaeological deep-testing investigation was to cut through the fill, if possible, and examine the character of the soils beneath, with an eye to whether these soil represent intact sequences of buried paleosols and subsoils, which could indicate the potential for archaeological sites to occur; or various coarse or unsorted sand and/or gravel, or buried wetlands or tidal flats. In the absence of developed paleosols and subsoils, these soils would indicate sand and gravel bar formation, and waterlogged/ estuarine conditions, respectively. The coarse sand/gravel deposits, filled in streams, or former tidal flats would indicate low or negligible archaeological sensitivity.

The deep testing for The Harbor at Beacon Pointe project found no evidence of archaeological sites or intact soil strata likely to contain archaeological sites. Rather, the most definitive evidence obtained shows that the project area is covered with fill, often composed of coal ash, but sometimes other materials such as cobbles, soil, and various debris constituents. Below the fill is either water laid sand deposits, often coarse but of variable texture, or clay/sandy clay typically associated with stream beds or tidal flats in this environment. A shovel test pit in the northeast corner of the project area is thought to have found evidence of a sandy fill with coal inclusions to a depth exceeding a meter.

Given the depth and nature of fill in the project area, a shovel test survey is not feasible. However, since the deep testing failed to encounter archaeological resources of any kind (including even traces of the structures that appear on early twentieth century USGS maps), or soil conditions conducive to the formation or preservation of archaeological contexts, there is a very low likelihood of archaeological sites occurring in the project area. As a result of these findings, no additional archaeological investigation is recommended.

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Goal and Scope of Work 1
DEEP TESTING PROGRAM 1
DEEP TESTING RESULTS 2
CONCLUSIONS AND RECOMMENDATION 3
REFERENCES 3
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APPENDIX B: PHOTOGRAPHS 6
APPENDIX C: FIGURES 7

INTRODUCTION

This report has been prepared pursuant to the recommendation of the Phase 1A archaeological survey (Schreyer and Curtin 2002). This recommendation was for backhoe testing of the project area, as deep fill was reported over the area. Formerly, two islands had occupied the area, as well as the south channel of Normanskill-Hudson confluence. These islands, referred to as Beacon and Cabbage Islands, are shown on 19th and 20th century maps. Their configurations vary considerably in these depictions, leaving doubt as to their stability, particularly in comparison to Papscanee Island on the east side of the Hudson. Unlike Beacon and Cabbage Islands, Papscanee has a long history of settlement and use as farmland, well-documented prehistoric components, and a significant degree of consistency in its configuration and landmarks over the course of time covered by cartographic documentation. The only structures shown on Beacon or Cabbage Island are a structure near the south end of Beacon Island on the 1893 USGS quad, and a series of buildings on or near the shore shown on the 1927 USGS quad (Schreyer and Curtin 2002). Six of these structures appear to be inside the project area, while another nine appear to north of the project area. It is suspected that these were insubstantial structures such as shacks, possibly for fishermen, or perhaps short-lived ice-houses. There are several, general references to ice-harvesting and ice houseS along the river in Brewer (1993), although none refer specifically to this location. No other record of these structures' existence has been found, and no trace of them exists on the ground or in the subsurface investigations reported here. Given what is known of the shifting configurations of these islands, and the depiction of the buildings on maps dated before the 1930 construction of the Sacandaga Reservoir, these structures must have been subject to flooding, and even periodic destruction. Moreover, Brewer (1993) indicates the decline of the ice industry with the advent of refrigerators in the 1920s. At any rate, these buildings are not thought to be houses or other substantial structures. They do not appear on the 1950 USGS quad.

Goal and Scope of Work

Given the deep fill cover, and the uncertain status, indeed, doubts concerning the stability of the shores and surface of Beacon and Cabbage Islands, the goal of the archaeological deep-testing investigation was to cut through the fill, if possible, and examine the character of the soils beneath, with an eye to whether these soils represent intact sequences of buried paleosols and subsoils, which could indicate the potential for archaeological sites to occur; or various coarse or unsorted sand and/or gravel, or buried wetlands or tidal flats. In the absence of developed paleosols and subsoils, these soils would indicate sand and gravel bar formation, and waterlogged/estuarine conditions, respectively. The coarse sand/gravel deposits, filled in streams, or former tidal flats would indicate low or negligible archaeological sensitivity.

DEEP-TESTING PROGRAM

The archaeological deep testing program was executed by making a series of nine backhoe cuts, scraping a cut bank with the backhoe bucket, and digging a deep shovel test pit. The locations of the backhoe cuts were selected in dispersed locations according

to several criteria. First, the actual former channel along the western side of the project area was avoided (although backhoe trench 10 was placed in a strategic location near it). Then a series of locations was tested within the bounds of the former islands. These trenches were placed either (1) in open areas typically covered with Phragmites (which thrive in the coal ash, fly ash, and slag based fill), or (2) a short distance from a trail that traverses the island from north to south. The heavily wooded character of the project area prevented access to the other locations, but based upon the historic and topographic maps, all areas tested appear to be representative of the conditions within the project area.

The topography of the project area is generally flat, but contains piles of fill and debris, forming an elevation on which the aforementioned trail runs. The highest point is a sandy mound with a cut bank along the trail, and in the absence of obvious large debris, this was examined for natural or cultural stratigraphy by making a clean scrape on the bank with the backhoe. Finally, as the northeast corner of the project area was inaccessible by backhoe due to the heavy tree cover, a deep shovel test pit was excavated in this area.

DEEP TESTING RESULTS

The results of the deep testing program are shown in the attached table (Appendix A). No evidence was found of buried paleosols or paleosol-subsoil sequences. A series of photos documents the project setting and soil conditions (Appendix B; although no photo was obtained for Trench 8). Scaled profiles typically were not drawn due to the depth of the trenches and the instability of the coal ash and other strata. However, measurements of the depth and thickness of each stratum was obtained by taping from the adjoining ground surface. Typically, the trenches were excavated to 100-300 centimeters below the ground surface.

Deep fill composed of coal ash was found almost everywhere, occurring in Excavations 1, 2, 3, 4, 5, 7, 8, and 10. The coal ash extended to depths of 82 centimeters in Excavation 1, 150-152 cm in Excavations 2 and 3, 170-290 cm in Excavations 4 and 5, and 148-180 centimeters in Excavations 7, 8, and 10. Coarse sand was found below the coal ash in Excavations 5 and 8. Clay indicative of stream bottom or tidal flat deposits was found below the coal ash in Excavations 4 and 10. No bottom to the coal ash was reached in Excavations 2 , 3 and 7. Although the coal ash was penetrated at Excavation 1, obvious fill strata containing plastic bags, twisted chrome and other modern garbage and debris occurred in the strata below the coal ash, indicating the presence of fill. The size of the debris made continued excavation in a defined trench impossible, and excavation was halted at 82 centimeters.

Coal ash was absent at Excavation 6, a backhoe trench that encountered a cobbley fill 48 centimeters deep over a thin, sandy clay, tidal flat-alluvial soil, which lay over laminated coarse sand deposits. Coal ash did not occur in the scraped bank, Excavation 9, which proved to contain an undifferentiated profile about 150 centimeters thick composed of silty sandy fill containing modern artifacts. Finally, no distinct coal ash stratum was found at Excavation 11, a shovel test excavated 102 centimeters deep.

Nonetheless coal was a common inclusion in the four silt or sand strata encountered. All of the strata in this test pit appear to represent very recent deposits without archaeological sensitivity.

CONCLUSIONS AND RECOMMENDATION

The deep testing for The Harbor at Beacon Pointe project found no evidence of archaeological sites or intact soil strata likely to contain archaeological sites. Rather, the most definitive evidence obtained shows that the project area is covered with fill, often composed of coal ash, but sometimes other materials such as cobbles, soil, and various debris constituents. Below the fill is either water laid sand deposits, often coarse but of variable texture, or clay/sandy clay typically associated with stream beds or tidal flats in this environment. A shovel test pit in the northeast corner of the project area is thought to have found evidence of a sandy fill with coal inclusions to a depth exceeding a meter.

Given the depth and nature of fill in the project area, a shovel test survey is not feasible. However, since the deep testing failed to encounter archaeological resources of any kind (including even traces of the structures that appear on early twentieth century USGS maps), or soil conditions conducive to the formation or preservation of archaeological contexts, there is a very low likelihood of archaeological sites occurring in the project area.

As a result of these findings, no additional archaeological investigation is recommended.

REFERENCES

Brewer, Floyd (editor)
1993 *Bethlehem Revisited: A Bicentennial Story, 1793-1993.* Bethlehem Bicentennial Commission, Bethlehem, New York.

Schreyer, Jessica E. and Edward V. Curtin
2002 *Phase 1A Archaeological Survey, The Harbor at Beacon Pointe Proposed Development, Town of Bethlehem, Albany County, New York.* Edward V. Curtin, Consulting Archaeologist, Saratoga Springs, New York.

APPENDIX A: DEEP TEST STRATIGRAPHIC DATA

Excavation Number	Excavation Type	Depths	Soil Description	Artifacts/Comments
1	Backhoe Trench	0-15	Gravelly gy br fill	Modern garbage and debris
		15-72	V dk gy cl (coal ash)	Modern garbage and debris
		72-75	Gy br si sa	Modern garbage and debris
		75-82	Or br and gy si	Modern garbage and debris
2	Backhoe Trench	0-104	Gy bl si sa (coal ash)	NCM
		104-150	Gy bl cl sa (coal ash) with bands of black	NCM
3	Backhoe Trench	0-152	Gy bl si sa (coal ash)	NCM
4	Backhoe Trench	0-290	Gy bl si sa (coal ash)	NCM
		290-300	Gy si sa cl –compacted	NCM
		300-330	Gy br cl si sa	NCM
5	Backhoe Trench	0-170	Gy bl si sa (coal ash)	NCM
		170-220	Dk gy br sa cl	Shell
		220-270	Br crs sa	NCM
6	Backhoe Trench	0-115	Humic dk br si sa	NCM
		15-48	Md br-gy si sa with common pebbles and cobbles (fill)	NCM
		48-78	Gy si cl mott with md br/or si sa - compact	NCM
		78-90	Md br-gy si sa	NCM
		90-108	Gy si sa – compact	NCM
		108-125	Or ye br si sa	NCM
7	Backhoe Trench	0-38	Gy si sa fill	NCM
		38-148	Gy bl si sa (coal ash)	NCM
8	Backhoe Trench	0-89	Gy bl si sa (coal ash) with bands of gy br si cl	NCM
		89-138	Gy bl si cl with many gravels and cobbles, and banded with gy br si cl (fill)	Brick, shell, possible iron inclusions
		138-178	Gy bl si sa (coal ash) with bands of gy br si cl	NCM
		178-225	Md br crs sa	Modern green bottle glass

9	Backhoe cut into existing bank	Entire face of backhoe cut (about 1.5 meters)	Md br sa si (fill)	Modern glass, brick, possible rusted metal
10	Backhoe trench	0-75	V dk gy br si coal ash	NCM
		75-80	Md br crs sa lens	NCM
		80-180	V dk gy br si coal ash	NCM
		180-230	V dk gy br si cl	NCM
11	Shovel Test Pit	0-18	Md br si sa	NCM, coal
		18-57	Gy br sa	NCM, coal
		57-73	Lt br ye si	NCM, coal
		73-102	Lt br ye sa	NCM, coal

APPENDIX B: PHOTOGRAPHS



Photo 1: Facing west, showing location of Excavation 5.



Photo 2: Excavation 1, western extension, south wall.



Photo 3: Excavation 2, north wall.



Photo 4: Excavation 3, south wall.



Photo 5: Excavation 4, east wall.

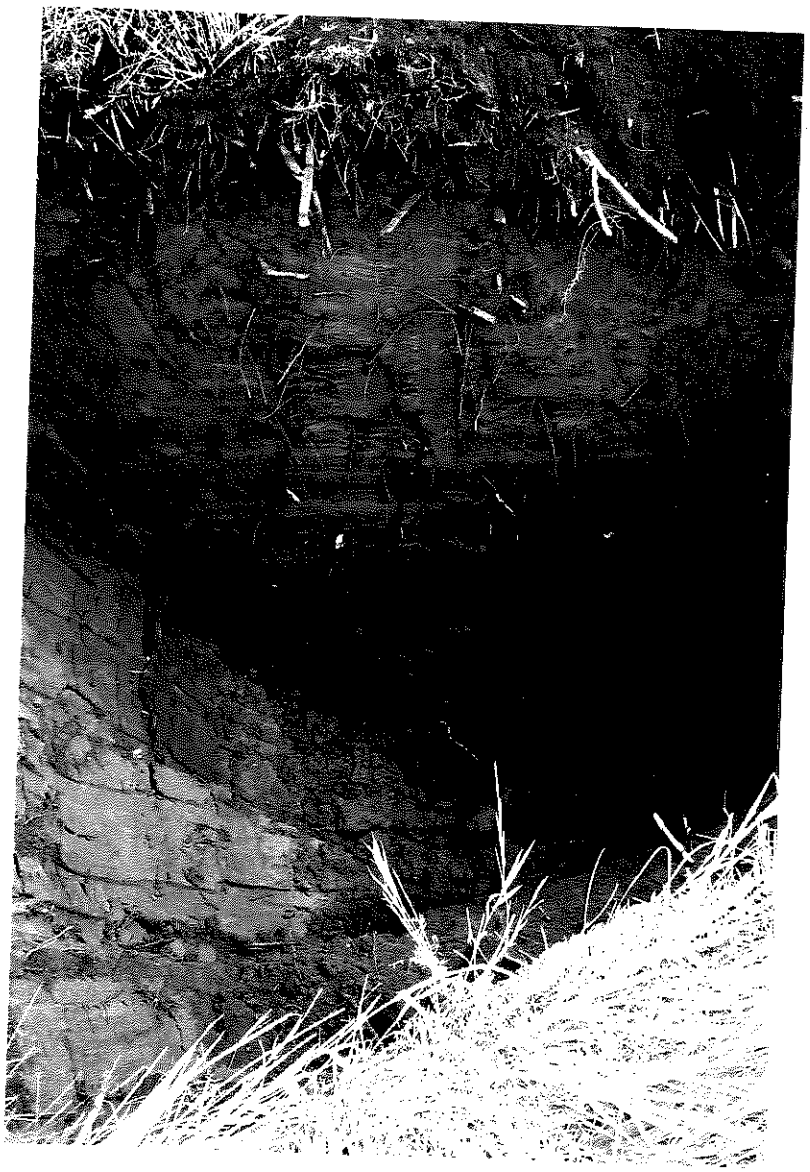


Photo 6: Excavation 5, east wall.



Photo 7: Excavation 6, south wall.



Photo 8: Excavation 7, east wall.



Photo 9: Excavation 9, facing east.



Photo 10: Excavation 10, south wall.

APPENDIX C: FIGURES

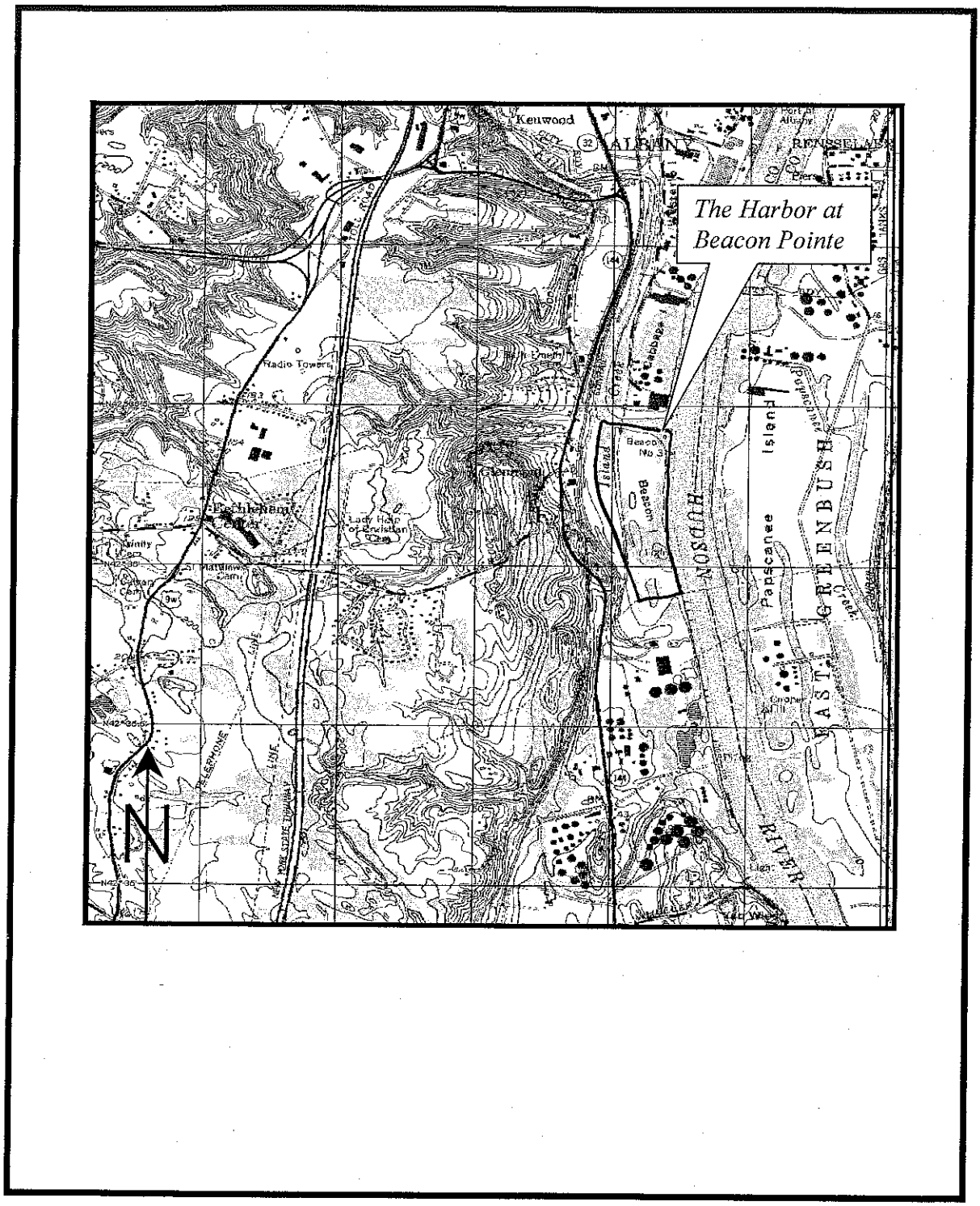
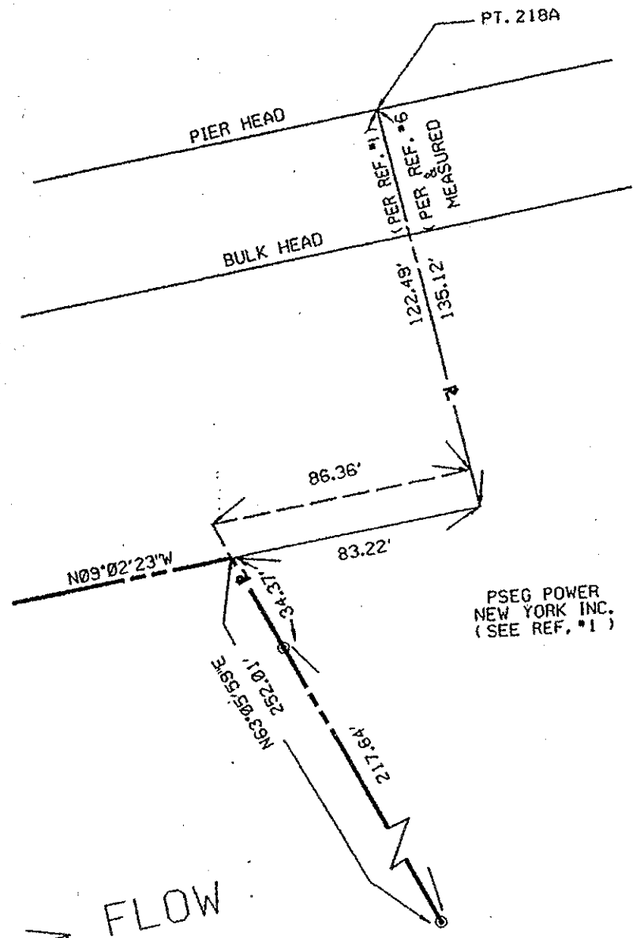


Figure 1: USGS 7.5 Minute Delmar Quadrangle.

D E F G

THE HARBOR AT BEACON POINTE
BACKHOE TRENCH EXAMINATION
EDWARD V. CURTIN, CONSULTING ARCHAEOLOGIST
627 MAPLE AVENUE
SARATOGA SPRINGS, NEW YORK 12866
(518) 580-0564



DETAIL "A"

FLOW

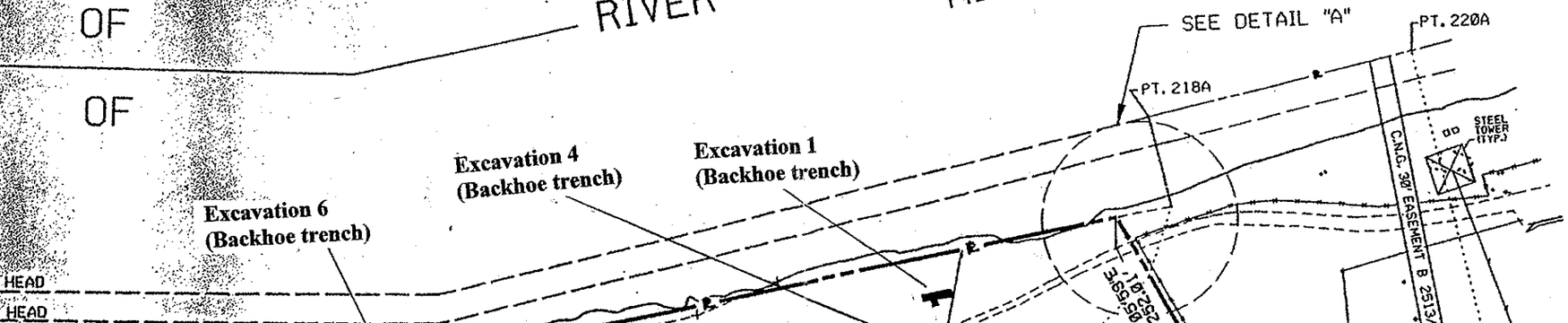
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8: LICENSE AGREE
FOR CONSTRUCT

9: DEED FROM THE
IN THE OFFICE

RIVER

RENSSELAER

ALBANY

FLOW

SEE DETAIL "A"

PT. 220A

PT. 218A

Excavation 4
(Backhoe trench)

Excavation 1
(Backhoe trench)

Excavation 6
(Backhoe trench)

C.N.G. 30' EASEMENT B 2513/P 8

STEEL TOWER (TYP.)

WETLAND

N09°02'23"W 1004.22'
(N08°30' W)

N53°05'55"E 2552.01'

Excavation 3
(Backhoe trench)

PSEG POWER
NEW YORK INC.
(SEE REF. #1)

LETTERS PATENT
OCT. 19,1948
BOOK 1149,
PAGE 205
(SEE REF. 9)

Excavation 2
(Backhoe trench)

N67°53'30"E 605.65

Excavation 5
(Backhoe trench)

AREA TO BE CONVEYED 77± ACRES
(A PORTION OF TX #98.00-02-10.2)

P.O.B.
N1372711.73
E669870.94

CNG 30'
EASEMENT
B2616/P 311

EASEMENT TO
CNG TRANS CORP.
B 2513/P 892

Excavation 7
(Backhoe trench)

TING PSE & G POWER. (SEE NOTE 5)

2700'±

FORMERLY DELAWARE AND HUDSON RAILROAD

LETTERS PATENT
JULY 17,1953
BOOK 1376, PAGE 75
(SEE REF. 6)

S 27°13'40" E
823.44'

115 kV ELECTRIC TRANSMISION LINE

S 15°19'47" E
605.83'

PATROON -ALBANY STEAM 0-679 SH.20 & 2X

N=1373004.90
E=669297.92

USGS STATION
"PARKE RESET"

100'

NEW YORK STATE HIGHWAY #193 ROUTE #144

DETAIL "A"

N63°05'55"E 217.64'

REFERENCE:

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ALBANY STEAM STATION PREPARED BY NIAG
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BY THE NEW YORK STATE DEPARTMENT OF
ENGINEERING. LAST DATED NOV. 10, 1930.

4: A MAP ENTITLED "ALBANY STEAM STATION
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RAILROAD CORPORATION TO GRANTOR RECOR
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PATENTS NO. 73, AT PAGE 370, AND RECORD
ON JULY 17, 1953 IN BOOK 1376 OF DEEDS

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FOR CONSTRUCTION AND MAINTENANCE OF

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ON DEC. 17, 1948 IN BOOK 1149 OF DEEDS

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HUDSON COUNTY OF

COUNTY OF

RIVER

RENSS

AL

Excavation 11
(Shovel test pit)

Excavation 6
(Backhoe trench)

Excavation 4
(Backhoe trench)

Excavation 1
(Backhoe trench)

PIER HEAD

BULK HEAD

260.56'

BOAT SLIP

N02°47'19"E 1846.12'
(N 03°18' E)

WETLAND

N09°02'23"W 1004.22'
(N08°30' W)

LETTERS PATENT
OCT. 19,1948
BOOK 1149,
PAGE 285
(SEE REF. 9)

Excavation 9
(Backhoe cut into existing bank)

RIU ENTERPRISES LLC
(SEE REF. # 8)

GRAVEL DRIVE

N83°25'41"W 776.90'
(N82°56'W)

AREA TO BE
MAINTAINED
AS A CHANNEL BY
NMPC IN AGREEMENT
WITH THE STATE
OF NEW YORK
(SEE REF. 9)

Built up area

Excavation 5
(Backhoe trench)

AREA TO BE CONVEYED 77± ACRES
(A PORTION OF TX #98.00-02-10.2)

LETTERS PATENT
DEC. 17,1948
BOOK 1149
PAGE 285
(SEE REF. 9)

Existing culvert

Excavation 7
(Backhoe trench)

Excavation 8
(Backhoe trench)

APPEL OF
N.Y. LLC

N86°56'41"W
(N86°26'W)
38.87'

N 06°33'19"E
112.00'
(N7°04'E)

N08°02'41"E
205.82'
(N 7°32'W)

8'

℄ OF TRACK

CORP.

BETHLEHEM
CORP.

℄ OF 15' EASEMENT FOR 8" WATER LINE & BENEFITTING PSE & G POWER. (SEE NOTE 5)

2700'±

FORMERLY DELAWARE AND HUDSON RAILROAD

300'±

355'±

215'±

27'±

S 16°29'41"E
406.76'
(S 15°55'E)

S 27°13'
823

S 15°19'47"E
605.83'

Excavation 5
(Backhoe trench)

AREA TO BE CONVEYED 77± ACRES
(A PORTION OF TX #98.00-02-10.2)

ion 7
oe trench)

SE & G POWER. (SEE NOTE 5)

2700'±

FORMERLY DELAWARE AND HUDSON RAILROAD

LETTERS PATENT
JULY 17,1953
BOOK 1376, PAGE 75
(SEE REF. 6)

P.O.B.
N1372711.73
E689878.94

N67°55'30"E

CNG 30'
EASEMENT
B2516/P 311

EASEMENT TO
CNG TRANS CORP.
B 2513/P 892

S 27°13'40" E
823.44'

S 15°19'47" E
605.83'

115 kV ELECTRIC TRANSMISION LINE

N 62°54'18" W
643.66'

S 67°11'25" E
89.58'

N66°48'12"E
213.37'

229.49'

#193 ROUTE #144

STATE HIGHWAY

NEW YORK

PATROON -ALBANY STEAM Q-679 SH.20 & 21

N=1373084.90
E=689297.92

USGS STATION
"PARKE RESET"

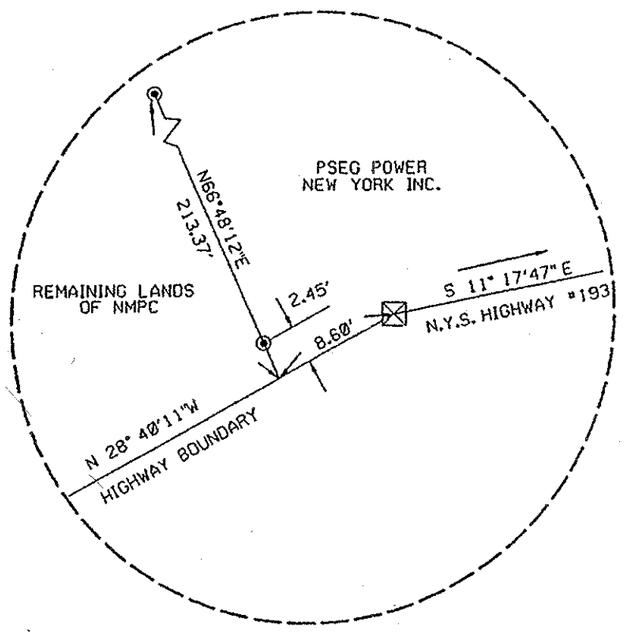
100'

6939-C SH.4,5,&6

BETHLEHEM - ALBANY 34.5KV Q-546 SH. 4 & 5 1

SEE DETAIL "B"

AREA TO BE RETAINED BY NIAGARA MOHAWK 24± ACRES
(A PORTION OF TX #98.00-02-10.2)



DETAIL "B"

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4: UNDERGROUND UTILITIES OTHER THAN THOSE SHOW
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DATE	DESCRIPTION OF ISSUE OR REVISION	DR.	CK.	APP.
2/22/02	ADDED CERTIFICATIONS & MISC. CHANGES	DJK		JMZ
2/20/02	REVISED REF. 1,2 & 8	DJK		JMZ

DJK/SM	DES.	APPROVED JMZ	
SM	DR.	APPROVED	
	CK.	APPROVED	
		APPROVED	

Niagara Mohawk®

NIAGARA MOHAWK POWER CORPORATION

ACCOUNT NUMBER

A MAP OF A SURVEY OF A PORTI
TO BE CONVEYED BY NIAGARA MO
CORP. NORTH OF THE ALBANY ST
TOWN OF BETHEHEM, COUNTY OF ALBANY, ST

Built up area

Existing culvert

Excavation 5
(Backhoe trench)

Excavation 7
(Backhoe trench)

Excavation 8
(Backhoe trench)

Excavation 10
(Backhoe trench)

AREA TO BE CONVEYED 77± ACRES
(A PORTION OF TX #98.00-02-10.2)

AREA TO BE RETAINED BY NIAGARA MOHAWK 24± ACRES
(A PORTION OF TX #98.00-02-10.2)

APPEL OF N.Y. LLC

LETTERS PATENT DEC. 17,1948 BOOK 1149 PAGE 285 (SEE REF. 9)

LETTERS PATENT JULY 17,1953 BOOK 1376 PAGE 75 (SEE REF. 6)

LETTERS PAT JULY 17,19 BOOK 1376, PA (SEE REF. 6

N 06°33'19" E 112.00' (N 7°04' E)

N 08°02'41" W 205.92' (N 7°32' W)

N 86°26'41" W 238.87' (N 86°)

N 85°58' W 215.53'

S 16°29'41" E 408.76' (S 15°55' E)

300'±

355'±

215'±

27'±

¢ OF 15' EASEMENT FOR 8" WATER LINE & BENEFITTING PSE & G POWER. (SEE NOTE 5)

2700'±

FORMERLY DELAWARE AND HUDSON RAILROAD

S 27°13'40" E 823.44'

S 15°19'47" E 805.83'

S 07°54'26" E 672.08'

S 05°07'34" W 813.72'

S 00°53'23" E 406.40'

N 62°17'26" W RADIUS 1139.35' ARC 368.4'

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CONSOLIDATED RAIL CORPORATION

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SCALE: 1"=200'

"CERTIFICATIONS SHALL RUN ONLY TO THE PERSON FOR WHOM THE SURVEY IS PREPARED, AND ON HIS BEHALF TO THE TITLE COMPANY, GOVERNMENTAL AGENCY AND LENDING INSTITUTION INDICATED HEREON, AND TO THE ASSIGNEES OF THE LENDING INSTITUTION. CERTIFICATIONS ARE NOT TRANSFERABLE TO ADDITIONAL INSTITUTIONS OR SUBSEQUENT OWNERS."

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CERTIFIED TO:
1. FIRST AMERICAN TITLE INSURANCE COMPANY OF NEW YORK.
2. QC REAL ESTATE DEVELOPERS, LLC

PROJECT NO. 3520

NO.	DATE	DESCRIPTION OF ISSUE OR REVISION	DR.	CK.	APP.
2	2/22/02	ADDED CERTIFICATIONS & MISC. CHANGES	DJK		JMZ
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REFERENCE DESCRIPTION	DRAWING NUMBER	NO.	DATE	DESCRIPTION OF ISSUE OR REVISION	DR.	CK.	APP.

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ADDITIONAL PHASE 1B ARCHAEOLOGICAL SURVEY

THE HARBOR AT BEACON POINTE PROPOSED DEVELOPMENT TOWN OF BETHLEHEM ALBANY COUNTY, NEW YORK

Prepared for

O. G. Real Estate Developer LLC
58 Washington Street
Saratoga Springs, New York 12866

Prepared by

Edward V. Curtin
Consulting Archaeologist
627 Maple Avenue
Saratoga Springs, New York 12866

Edward V. Curtin, Ph. D.
Report Author

September, 2003

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MANAGEMENT SUMMARY

Additional study of the proposed Harbor at Beacon Pointe project area has been conducted in order to provide additional information to the New York State Office of Parks, Recreation, and Historic Preservation. Two questions are of concern. The primary question is whether the sub-fill soils identified by back-hoe excavation during the Phase 1B survey represent recent alluvial, tidal flat, or sub-aqueous deposits, or dredge spoil. Of related interest is the question of whether there are likely to be soils below fill or dredge spoil that may have archaeological potential as buried Hudson floodplain deposits.

As part of this study 18 available soil boring logs were reviewed. The majority of the soil boring data indicates that, for the most part, sub-fill soils were formed below water. This inference is based upon the gray color of the sub-fill sediments and the patterned vertical and horizontal distributions of soil particle size, as determined by the relative frequency of references to sand, silt and clay. Two soil borings proximal to each other, numbered B-82-7 and S-12, show anomalous stratigraphy containing either brown sediments or the presence of red clay and wood fragments. Since these occurrences could indicate the presence of sediments exposed to oxygen in the first instance, and possibly burned soil and forest vegetation in the second instance, a new series of back-hoe cuts was placed between and surrounding these soil borings (these soil boring sites are now used as monitoring wells).

Seven additional back-hoe cuts were excavated. The result of the new backhoe cuts showed that soils formed in sub-aqueous environments are typically found below the fill, even in this vicinity. The brown soil, red clay, and wood identified in the soil borings were found to be localized contents of the fill in this part of the project area, and an example of variation in the fill not observed in most of the previous back-hoe cuts. No evidence of either archaeological sites or of potentially stable (above-the-water's edge) land surfaces was observed.

In accordance with these findings, no additional archaeological investigation is recommended.

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INTRODUCTION

The following report has been prepared to address the request for additional information resulting from the review of the Phase 1A and 1B archaeological survey previously prepared for this project (letter from Douglas Mackey, New York State Office of Parks, Recreation and Historic Preservation, date, 2003). The issue is whether the sub-fill soils reached by the backhoe survey previously conducted at the proposed Harbor at Beacon Pointe project area had reached below fill. Specifically, there is a question as to whether the soils found below coal ash or other identified fill are old tidal flats sand and gravel bar formations, as concluded in the report, or whether they are dredge spoil that could be covering intact archaeological resources. The recommended first step to answer this question was to examine deep boring logs for evidence of soil strata that could contain archaeological resources. If such strata were identified, the recommended second step was to examine these areas further, if a feasible method could be identified, given the depth of the deposits (possibly below three meters of unstable fill in at least some cases).

SUMMARY OF PREVIOUS INVESTIGATION

The Phase 1A archaeological survey found that the project area (Figures 1 and 2) should be considered sensitive for the occurrence of prehistoric and historic archaeological sites, subject to suitable preservation conditions. The issue of the potential lack of suitable preservation was raised due to the shifting and changing configurations of the islands underlying the Beacon Pointe project area, as depicted on a long series of historic maps. In comparison, the configuration of the more substantial Papscanee Island directly across the Hudson appears to have been much more stable, as depicted on the same maps. This difference is taken as evidence that the islands in question on the west side of the Hudson were in fact shifting and changing, in contrast to the interpretation that variable depiction results from significant map errors.

The Phase 1B survey resulted in the excavation of ten backhoe cuts and one hand-excavated test pit in a location the backhoe couldn't reach due to high slope and thick forest. These tests were identified as Excavations 1-11, and are shown on the endsheet of the present report. The backhoe cuts varied from a little less than one meter to over three meters deep. The deep shovel test was a little more than a meter deep. No evidence of archaeological sites was found. Typically, the backhoe cuts encountered deep fill, usually composed of very dark gray or brown to black coal ash. This was sometimes capped with silty sand or gravelly fill.

It is useful to review these excavations where they exceeded the depth of fill. The fill was underlain successively by sandy clay and coarse sand in Excavation 5. Various silty sand strata were found in Excavation 6 below four feet of sandy and cobbley fill. The sub-fill deposits appear to be a sand bar formation capped by sediments formed in still water, such as a cut-off stream channel. Coarse sand was found deep below three stratified fill layers in Excavation 8. These sub-fill deposits are also interpreted as representing a bar formation event. Gray-brown silty clay was found below deep,

stratified fill deposits in Excavation 10. The sub-fill deposits here represent the bottom of the former Normanskill south outlet channel. Excavation 11, a broad, deep shovel test, found four stratified layers of sand and silt, each containing coal, to a depth of 102 centimeters. These strata may represent fill, recent alluvium, or a combination.

The Phase 1B survey concluded that no evidence of archaeological sites, paleosols, or paleosol-subsoil sequences had been found. As a consequence, no further archaeological work was recommended.

THE PRESENT, ADDITIONAL PHASE 1B SURVEY

The present survey is an additional effort to address the concern raised in the review process that the sub-fill soils may be dredge spoil, rather than native, intact soils without evidence of archaeological sites. Two approaches address this concern, through a scope of work developed in consultation with Mr. Douglas Mackey of the OPRHP. These are a synthesis of the information contained in several series of previous soil borings, and a new series of backhoe cuts focused on an area identified as having archaeological potential through the review of the boring logs.

Synthesis of Beacon Pointe Soil Borings

Three sets of soil borings were made within the Beacon Pointe project area between 1979 and 1988 Figure 3). These include the 1979 borings by Empire Soil Investigations, Inc. for RECRA Research/Wehran Engineering, the 1982 borings by Empire Soil Investigations, Inc., and the 1987-88 borings made by Law Environmental. These borings were made in the course of drilling water monitoring wells, and are distributed broadly across and beyond the Beacon Pointe project area. Although occasionally a boring log was missing from the data reviewed, 18 boring logs exist for the project area. The result of the review of these logs is synthesized below. The synthesis is organized according to whether the borings are located in the old bed of Normanskill Creek (the creek's mouth was relocated and the old bed filled with bottom ash and fly ash sometime during the 20th century); or whether the boring was located over an old island, now covered with fill. The synthesis is further organized according to whether or not the borings contain anomalies that could be indicative of paleosols or soil stratigraphic sequences that could contain archaeological sites. Responsive to the issue of whether *in situ* soils or dredged sediments occur below the fill, careful attention has been paid to the color, texture, and content of all reported sub-fill soils.

A. <u>The Old Bed of Normanskill Creek</u>:

The old bed of Normanskill Creek has been filled and the channel and mouth of the creek have been diverted north. The soil boring logs for this area indicate that the primary fill material is coal ash, referred to in some logs as fly ash, and in Law Environmental's isopach map of ash depth as bottom ash/fly ash (Figure 4). This map shows the ash overlying the old stream channel and the former mouth of the creek, with the greatest depths over the creek. The ash overspreads the old creek bank onto the unstable island shown on a series of historic maps. The isopach map shows the ash as

about 10 to more than 20 feet deep over the old creek channel. The soil borings indicate an extensive ash bed 10-27 feet deep. The greatest depth is near the old creek mouth.

The ash sits on top of sand, silt or clay strata. From north to south the strata immediately below the ash vary from dark brown organic silt with fibrous organics (interpreted as formed in a tidal flat environment), to gray sand to gray silt overlying gray sand. The change in soil particle size is indicative of change in stream velocity as the Normanskill channel deepened at the Hudson estuary confluence. The basal strata vary from sands overlying bedrock in the north to gray silt and clay, gray clay, or varved gray clay, respectively to the south. The gray sediments are interpreted as formed below water, with the varved clay formed in Glacial Lake Albany.

This series of five soil borings shows ordered, north to south sequences in terms of (1) a progression from tidal flats to underwater soil formation environments, and (2) generally decreasing soil particle size inferred from the relative frequency of sand, silt and clay references in the boring logs. These trends reflect the deepening of water and decrease of stream velocity from north to south.

B. The Former Island:

The part of the project area referred to as the former island is shown as the shifting configuration of an island or islands on historic maps. The Phase 1A report inferred that these might be considered more aptly as sand or gravel bars, since little continuity over time was documented (unlike Papscanee Island across the river. Several of Papscanee's features are continuously recognizable on the series of historic maps).

Thirteen soil boring logs were reviewed for this part of the project area. They are derived from three samplings made in 1979, 1982, 1987-1988, respectively. The information from these logs varies somewhat, as the 1979 and 1982 logs record the presence of fly ash, while the 1987-1988 logs do not do so explicitly (Other evidence indicates Law Environmental must have recorded the depth of ash found in its borings, even though it is not recorded on the boring logs *per se*). Nonetheless, the entire series is useful when the Law Environmental isopach map of ash depth is used in conjunction (Figure 4). This is particularly true since the sediments below fill are of more interest than the fill for the present review of information.

Two of the thirteen soil borings contain anomalies discussed under item C below. Therefore, the present discussion is based upon eleven soil boring logs. The other two are reviewed in the next section. As mentioned, the recording of fly ash was uneven between reporters. Nonetheless, this series explicitly documents14-17 feet of fly ash near the former creek outlet in the southeastern part of the project area, and 16 feet of fly ash on the former east bank of the creek near the center of the project area. Several other borings are presumed to have had fly ash based upon the Law Environmental map. However, these borings are recorded as having dark colored sand in the upper strata. Based upon the current fieldwork, it is inferred that these are observations of the same fill material.

The northeast corner of the project area is relatively free of ash. The upper strata in this part of the project area are recorded as having gray sand and silt, brown sand and silt, brown sand, or gray fill with silt and some fly ash. The reported fill is in a location proximal to the artificial Normanskill channel and mouth, and probably is related to the construction of these features. Aside from the fill, the prevalence of sand without distinct silt strata is assumed to indicate recent alluvium of the sort associated with the shifting, unstable island or bar configurations inferred from the historic maps.

Below the fill, ash, or recent alluvium occur a variety of gray sediments including sand, silt, and clay, with particle size typically decreasing with depth, and varved clays in the deepest sediments. As before, the gray clays are inferred as formed below water, because exposure to oxygen in the air turns sediments brown. Occasionally, however, brown sand was found below the gray sediments. This sand is inferred to represent sand bars or other alluvial sediments redeposited under water or inundated after deposition due to the rise in the estuary's level (corresponding to world-wide sea level rise) during the Holocene. The data from the soil boring logs indicate uniformly, with the exceptions discussed below, that the soil underlying the fly ash was formed below water, and the soil below either fill or sediments that appear to be recent alluvium similarly formed below water. This finding substantiates the inference of the Phase 1B survey report that soils below fill or recent alluvium within the project area are not archaeologically sensitive. However, two soil borings provide anomalies possibly indicative of archaeological sensitivity within a localized part of the project area, as discussed below.

C. Anomalous Stratigraphy on the Island:

Soil borings B-82-7 and S-12 are within about 200 feet of each other near the river shore, and contain anomalies suggestive of conditions that warrant further consideration.

Boring B-82-7 shows an upper stratum of five feet of dark brown fine sand and silt (possibly recent alluvium) overlying another five feet of dark brown silt and fine sand, on top of yet another five feet of dark brown, finer to medium textured sand. The silt content and color of the middle stratum possibly is indicative of a relatively stable section of shore line, perhaps involved with levee formation on a small island that persisted over a period of time. Gray sand and silt occur below fifteen feet, providing another glimpse of the common, below water soil formation environment in this project area.

The adjoining boring to the south, S-12, encountered a stratum described as a red clayey silt 2.0-2.5 feet below the surface, and wood within the underlying gray to black fine sand. Gray sediments occur below six feet. This boring is mapped within the ash on the ash isopach map, so it is possible that the anomalies seen in this boring are within fill.

New Backhoe Cuts

Seven new backhoe cuts enumerated Excavations 12-16 as well as 1A (due to proximity to the former Excavation 1), were deployed in the vicinity of soil borings B-82-7 and S-12. These borings are no more than 15 meters (50 feet) apart and cover the areas surrounding the anomalous soil borings.

The previous soil borings were relocated by finding the well monitoring pipes in the expected locations. Boring S-12 is clearly marked as such. Boring B-82-7 is not labeled in the field, but its position in relation to S-12 leaves no doubt about its identification.

The backhoe cuts were trapezoidal in shape, about four meters wide at the base and about five meters on a side. They were stepped to allow entry for examination of the exposed deep sediments. Their locations are shown on the endsheet of this report.

Excavation 12 (Photo 1; Figure 5A): Excavation 12 was placed 65 feet (c. 20 meters) northwest of boring B-82-7, and excavated to a depth of 17 feet (5.2 meters). The upper 9 feet (c. 2.8 meters) consisted of dark brown to black sandy silty fill with pockets of light brown loam, brick, concrete, metal and cobbles. This was underlain by approximately 1 foot (c. .3 meter) of dark gray sandy silt. From 10 17 feet (c. 3.1-5.2 meters) below surface a medium gray silty clay was found. The water table was reached at the bottom of the trench and excavation ceased. There was no cultural material below the fill in this trench. The stratigraphy is interpreted as fill overlying relatively fine grained sediments formed in below water. The darker, upper clay may be more organically rich than the sediments beneath. There was no cultural material below the fill.

Excavation 13 (Photo 2; Figure 5B): Excavation 13 was positioned about 25 feet (7.5 meters) directly north of boring B-82-7, and excavated to a depth of 16 feet. The upper 5 feet (c. 1.5 meters) was dark brown to black sandy silt fill with pockets of light brown loam, stone, brick, concrete and metal. A tan clayey, silty sand fill containing plastic, stone, concrete, saplings and branches underlay this fill. The lower fill was underlain by medium gray silty clay from 12.0-13.5 feet (c. 3.7-4.2 meters) and light gray silty clay 13.5-16.0 feet (c. 4.2-4.9 meters) below surface, respectively. There are two fill episodes overlying sediments laid down below water. There was no cultural material below the fill.

Excavation 14 (Photo 3; Figure 5C): Excavation 14 was located about 25 feet (c. 7.5 meters) directly south of boring B-82-7, and about 150 feet (c. 46 meters) north of boring S-12. It encountered two similar fill strata, with dark brown to black silty sandy gravelly fill containing tree wood, cobbles, shale, boards and plywood in the upper 6 feet (c. 1.8 meters), and tan silty sandy clay containing black silt lenses, cut branches and saplings from 6 to 11 feet (c. 1.8-3.4 meters) below surface. The medium gray silty clay was encountered at 11 feet (c. 3.4 meters) and about 1 foot (.3 meters) of this was removed, ending the excavation at 12 feet (c. 3.7 meters) below surface. No cultural

material was found below the fill. This stratigraphy is interpreted similarly to Excavation 13, with some variation seen in the relative thickness and content of the fill strata.

Excavation 1A (Photo 4; Figure 5D): Excavation 1A was placed 20 feet (c. 6.2 meters) west of the Phase 1B Excavation 1 in order to reach greater depth by avoiding fill-obstructions encountered previously. This location is about 95 feet (c. 29.2 meters) southwest of boring B-82-7 and about 80 feet (24.6 meters) northwest of boring S-12. The fill encountered in Excavation 1A was 10.5 feet (3.2 meters) of dark brown to black silty sandy matrix containing brick, shale, cobbles, branches, saplings, and pockets of crushed stone similar to railroad ballast. This fill overlies the familiar medium gray silty clay. The excavation was ended in this clay at a depth of 15 feet (c. 4.6 meters) below surface. No cultural material was found below the fill. This excavation found the same upper fill encountered in all previous cuts in this vicinity, but did not find the lower, tan clay fill deposit. The sub-fill soil was the gray silty clay typical of this vicinity. This soil is interpreted as having formed below water due to its color.

Excavation 15 (Photo 5; Figure 5E): Excavation 15 was located 50 feet (c. 15 meters) south of boring S-12. The upper 2 feet (c. .62 meter) of the trench contained dark brown loamy fill with cobbles. Below this from 2.0 to 9.5 feet (c. .62-2.9 meters) was a black silty fill gritty with burned coal ash. This layer was very compact in the top 1-2 feet (c. .31-.62 meter). The typical medium gray silty clay was found at 9.5 feet (c. 2.9 meters). Excavation was terminated within this stratum at 13 feet (c. 4 meters) below surface. No cultural material was found in or below the fill. The Excavation 15 stratigraphy exhibits the pattern observed at Excavations 12 and 1A, where very dark colored fill overlies the gray silty clay interpreted as formed in an aqueous environment. This kind of sediment underlies both fill patterns observed among these excavations.

Excavation 16 (Photo 6; Figure 5F): Excavation 16 was positioned 50 feet (c. 15 meters) west/northwest of boring S-12. It is also about 50 feet south of the previous Excavation 4 from the Phase 1B survey. Excavation 16 removed 10 feet of black, gritty silt fill containing coal ash and pockets of tan and brown sand and silt before finding a concrete obstruction. Excavation was then halted in case the concrete is a conduit not marked on maps.

Excavation 17 (Photo 7; Figure 5G): Excavation 17 was located 50 feet (c. 15 meters) north of Phase 1B Excavation 4 and 100 feet (c. 30 meters) north of Excavation 16. The upper 9.5 feet (c. 2.9 meters) was black gritty silt w/ pockets of brown sand and silt. The stratum immediately below this fill was a 2 feet (c. .6 meter) thick layer of medium gray brown sandy silt containing gravel, pebbles and occasional freshwater mollusk shell fragments resembling *Elliptio* sp. At 11.5 feet (c. 3.5 meters) medium gray silty clay was encountered. No cultural material was found in any of the strata. This stratigraphy is interpreted as deep fill over a coarse-grained river sediment deposited in moving water, laying on top of the gray silty clay (itself originally deposited in ponded or slow water).

DISCUSSION OF NEW EXCAVATIONS

The new excavations have not resulted in the identification of archaeological sites or paleosols potentially containing archaeological sites. They do, however, provide a basis for interpreting the anomalous soil borings in this location. Soil boring B-82-7, which contained deep sediments described as "brown," has been flanked by two trenches that found stratified fill deposits including a thick, lower horizon of fill composed of a "tan" soil matrix. These fills terminate at depths of 11-12 feet, well into the target depth of 5-10 feet where a possible thick paleosol or paleosol sequence had been expected as a possible source of the soil boring anomaly. The tan fill matrix in fact ranges from 5-12 to 6-11 feet, two measurement that are similar to the 5-10 feet deep brown soil anomaly in the soil boring. Thus, it is straight-forward to interpret the "brown" soil stratigraphy found in the upper portion of boring B-82-7 as associated with the tan fill layer found in Excavations 13 and 14.

The anomalies of boring S-12 also appear to be referable to variation in the overlying fill in this vicinity. Wood, as found at about six feet in soil boring S-12 between 2.5 and 6 feet deep, occurred in Excavations 13, 14, and 1A at similar depths and somewhat deeper. Boring S-12 appears to be near the southern boundary of wood occurrence in the fill, based upon the excavations reported here. The six inch thick deposit of red clayey silt reported from 2.0-2.5 feet in boring S-12 was not encountered elsewhere, but varied content including bricks and pockets of soil are common occurrences in the upper fill of several of the presently reported trenches. Therefore, the red silty clay of boring S-12 seems more a part of the fill variation (possibly even a decayed brick) than an anomaly indicative of a paleosol or archaeological feature.

In addition to the excavations performed for this Phase 1B survey addendum, Excavation 4 of the Phase 1B survey was located nearby, between the present survey's Excavations 16 and 17. Reaching to a depth of about 11 feet (3.3 meters), this trench adds one additional control point in the survey around the soil boring anomalies. Excavation 4 found coal ash fill to a depth of 9.5 feet (c. 2.9 meters), and gray sediments believed formed in an aqueous environment below.

CONCLUSION AND RECOMMENDATION

The issue concerning whether there may be archaeological sites, or soil having the potential for archaeological sites below the fill within The Harbor at Beacon Pointe project area has been addressed in consultation with the New York State Office of Parks, Recreation, and Historic Preservation. This consultation developed a scope of work which involved the review of soil borings and if necessary, the collection of additional data to address issues arising from that review of soil boring information. The available 18 soil boring logs were reviewed. These were rather consistent in showing upper soils easily interpreted as fill, and lower soils that appeared to have formed below water, on the basis of their gray color. Occasional brown or gray brown soils appeared to be associated with dynamic, natural island or shoreline features such as sand and gravel bars. The general conclusion of this review is that the initial interpretation that the

project area is composed of fill underlain by soils without archaeological sensitivity is correct.

However, two anomalies proximal to each other were identified at soil borings B-82-7 and S-12. A series of seven additional machine-dug excavations were placed adjacent to, between, and surrounding these anomalous soil borings. The conclusion of the analysis of the results of these excavations is that the anomalies are related to variation in the fill capping the project area. In every instance, the sub-fill soil appears to have formed below water, and thus were not stable land surfaces available for past human occupation.

As a result of the conclusions drawn from this additional investigation, no further archaeological survey of the proposed Harbor at Beacon Pointe project area is recommended.

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RECRA Research, Inc. and Wehran Engineering, P. C.
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Schreyer, Jessica E., and Edward V. Curtin
2002a *Phase 1A Archaeological Survey, The Harbor at Beacon Pointe Proposed Development, Town of Bethlehem, Albany County, New York.* Edward V. Curtin, Consulting Archaeologist, Saratoga Springs, New York.

2002b *Phase 1A Archaeological Survey, The Harbor at Beacon Pointe Proposed Development, Town of Bethlehem, Albany County, New York.* Edward V. Curtin, Consulting Archaeologist, Saratoga Springs, New York.

APPENDIX A: PHOTOS

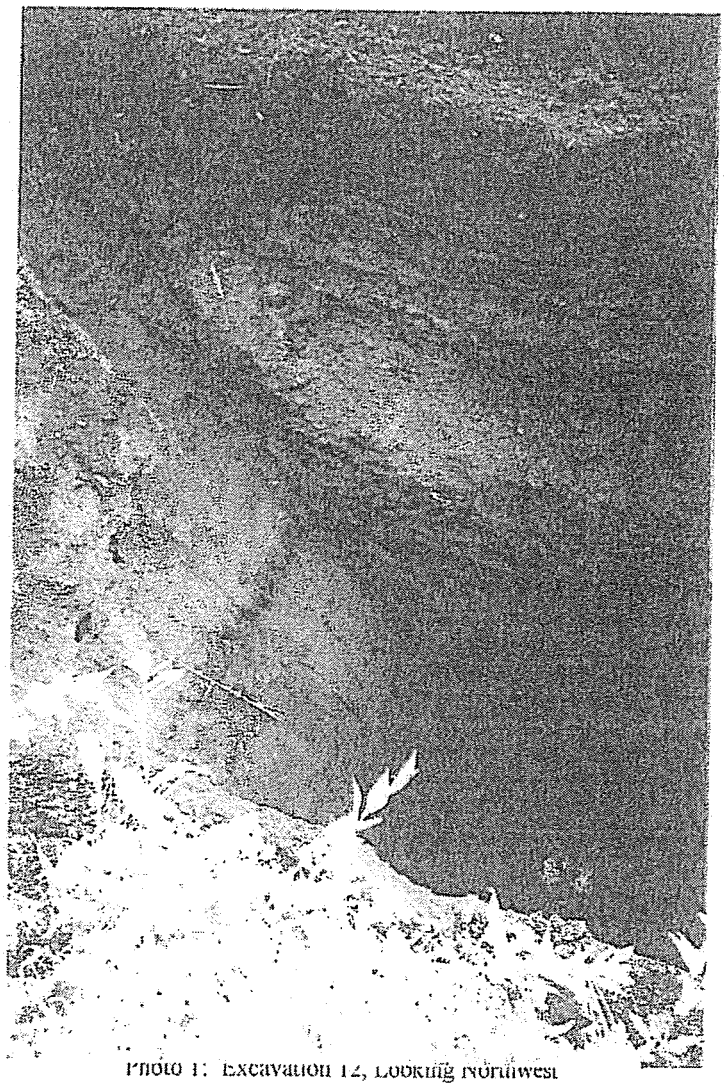


Photo 1: Excavation 12, Looking Northwest

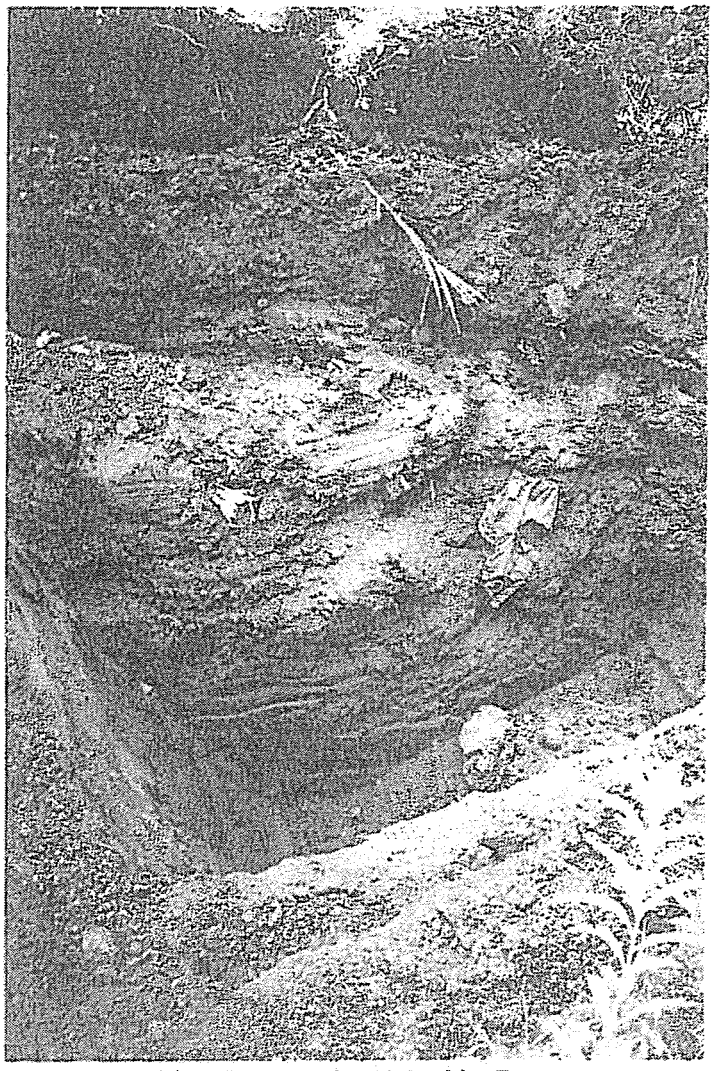


Photo 2: Excavation 13, Looking East

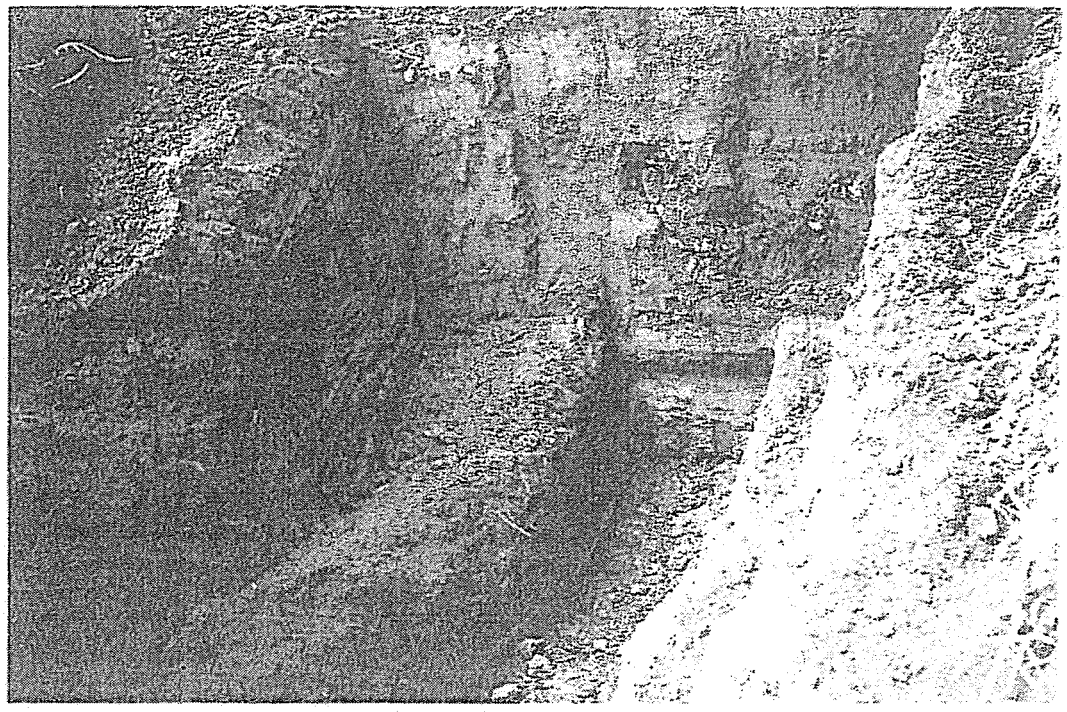


Photo 3: Excavation 14, Looking East



Photo 4: Excavation 1A, Looking East

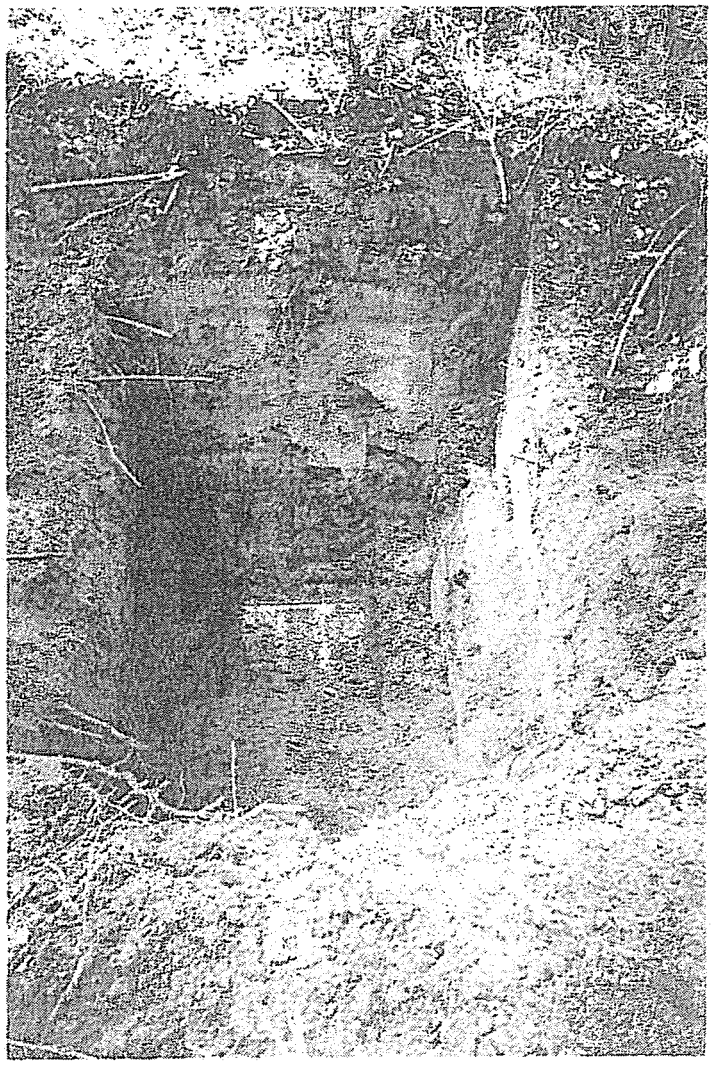


Photo 6: Excavation 16, Looking East

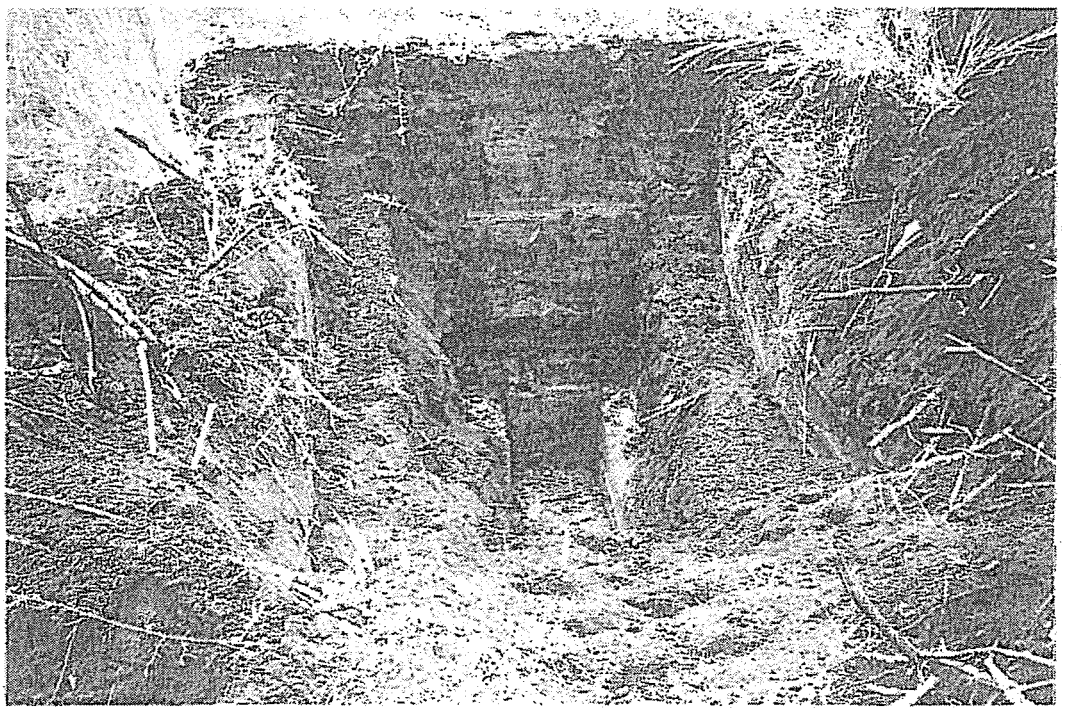


Photo 7: Excavation 17, Looking West

APPENDIX B: FIGURES

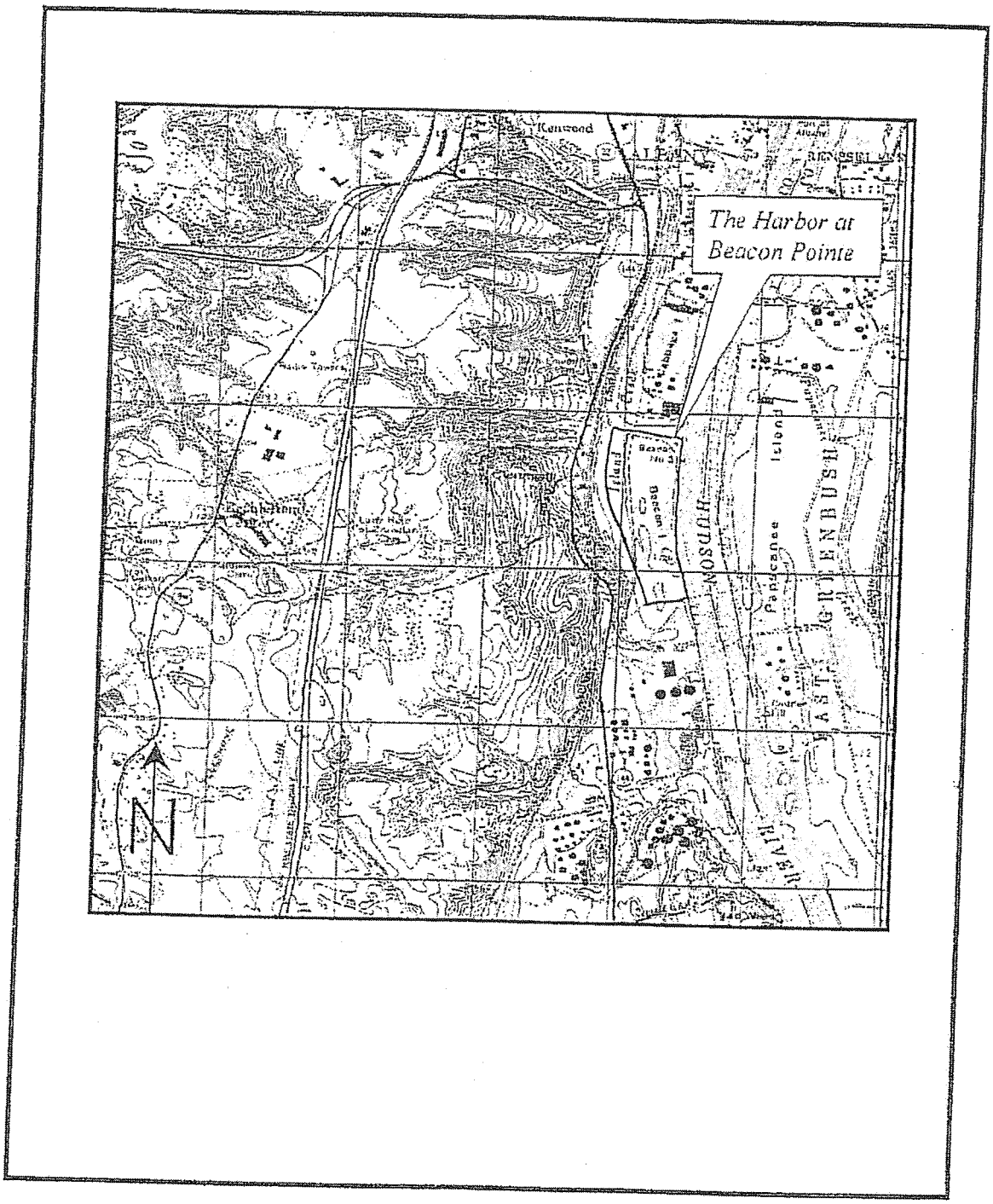
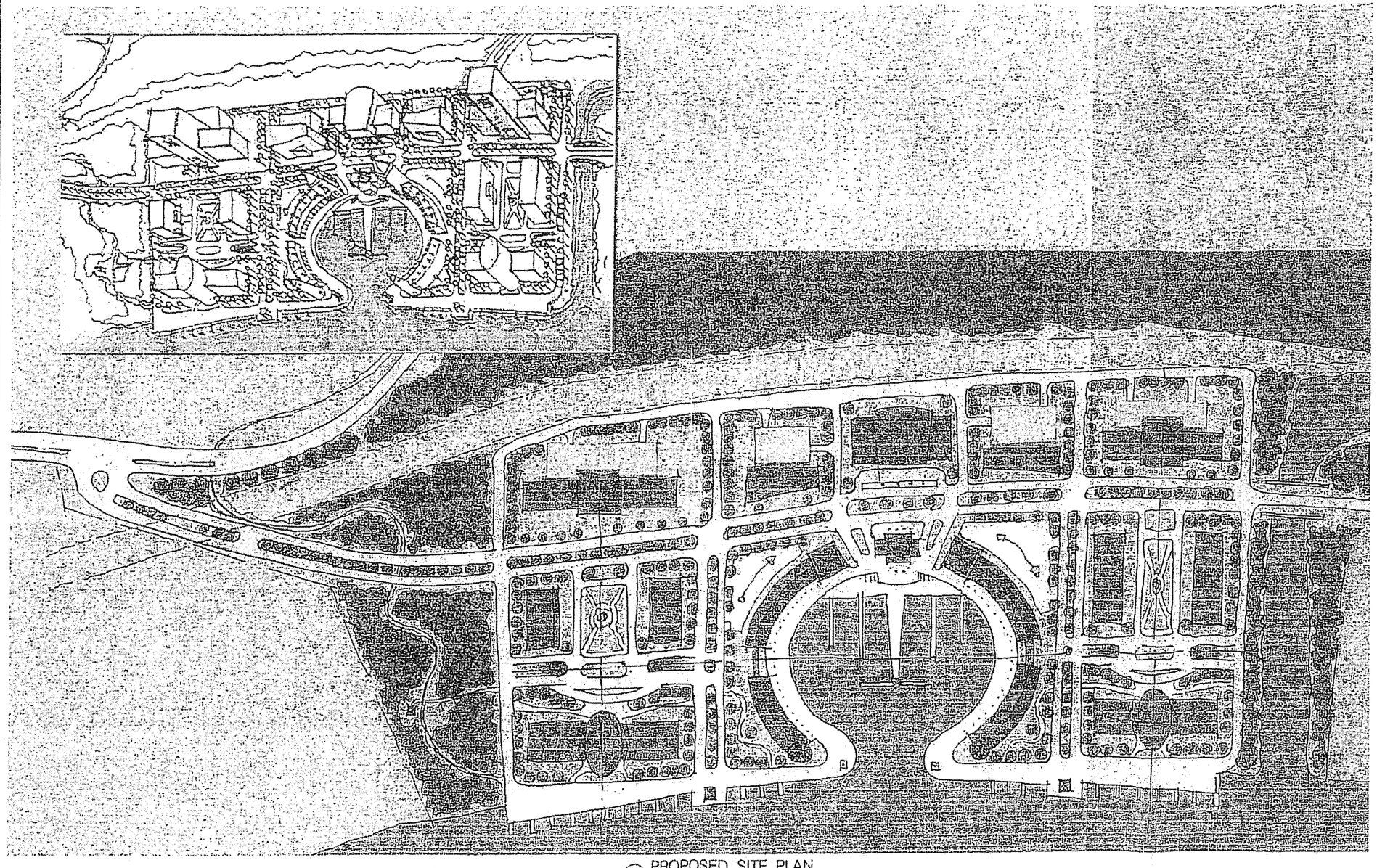


Figure 1: USGS 7.5 Minute Delmar Quadrangle.



PROPOSED SITE PLAN

RTA

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THE HARBOR at BEACON POINTE

for

BEACON POINTE L.L.C.

TOWN of BETHLEHEM ALBANY COUNTY, NEW YORK

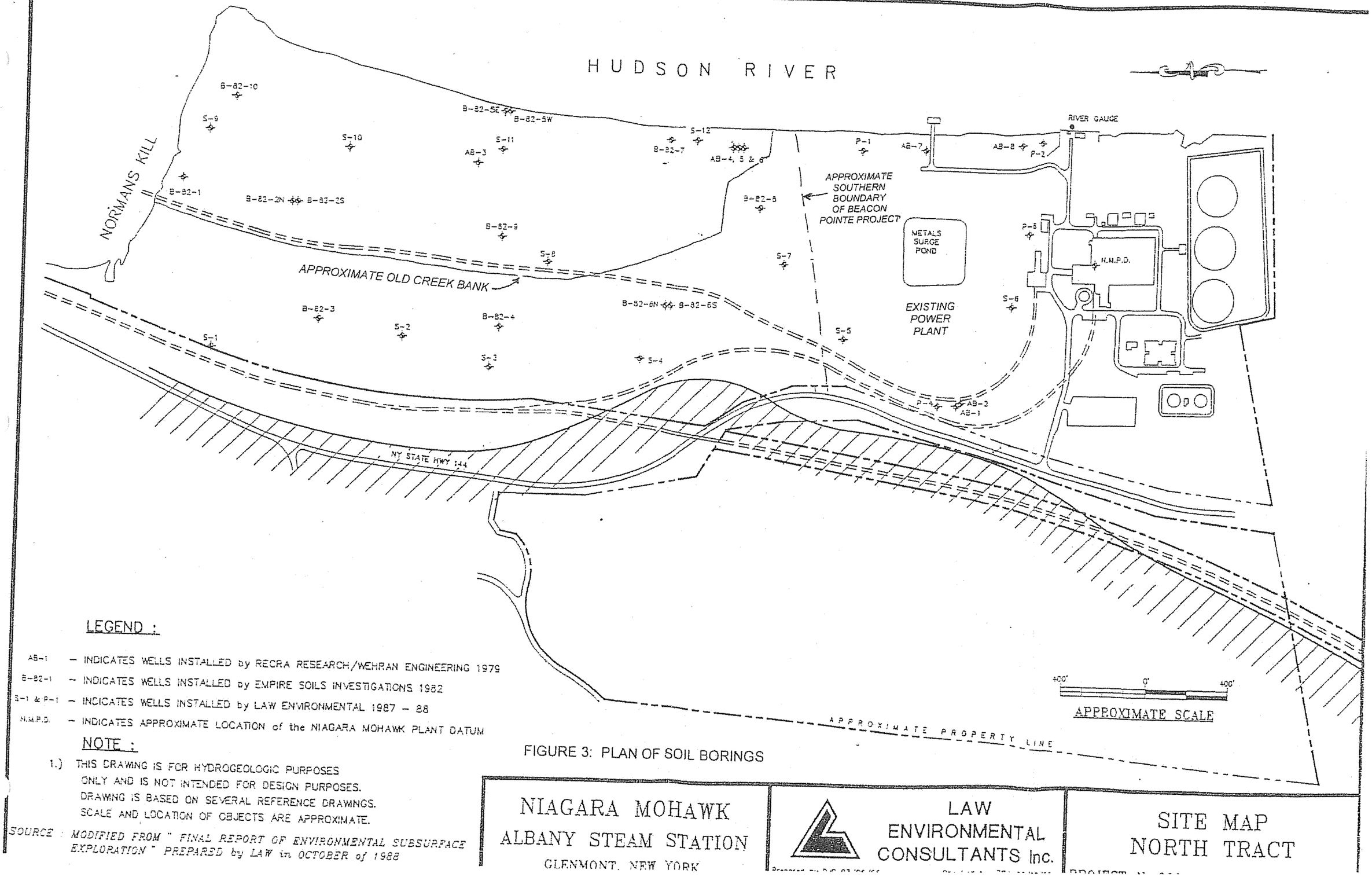
Dominick Ranieri Architect

100 Sitterly Road • Clifton Park • New York 12065

Phone: (518) 371-8626 • Fax: (518) 371-8714

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FIGURE 2: SCHEMATIC OF PROPOSED SITE PLAN



LEGEND :

AB-1 – INDICATES WELLS INSTALLED by RECRA RESEARCH/WEHRAN ENGINEERING 1979

B-82-1 – INDICATES WELLS INSTALLED by EMPIRE SOILS INVESTIGATIONS 1982

S-1 & P-1 – INDICATES WELLS INSTALLED by LAW ENVIRONMENTAL 1987 – 88

N.M.P.D. – INDICATES APPROXIMATE LOCATION of the NIAGARA MOHAWK PLANT DATUM

NOTE :

1.) THIS DRAWING IS FOR HYDROGEOLOGIC PURPOSES ONLY AND IS NOT INTENDED FOR DESIGN PURPOSES. DRAWING IS BASED ON SEVERAL REFERENCE DRAWINGS. SCALE AND LOCATION OF OBJECTS ARE APPROXIMATE.

SOURCE : MODIFIED FROM " FINAL REPORT OF ENVIRONMENTAL SUBSURFACE EXPLORATION " PREPARED by LAW in OCTOBER of 1988

FIGURE 3: PLAN OF SOIL BORINGS

NIAGARA MOHAWK
ALBANY STEAM STATION
GLENMONT, NEW YORK

LAW ENVIRONMENTAL CONSULTANTS Inc.

SITE MAP
NORTH TRACT

9508C-5-0006/0006-2 DP 03/06/96

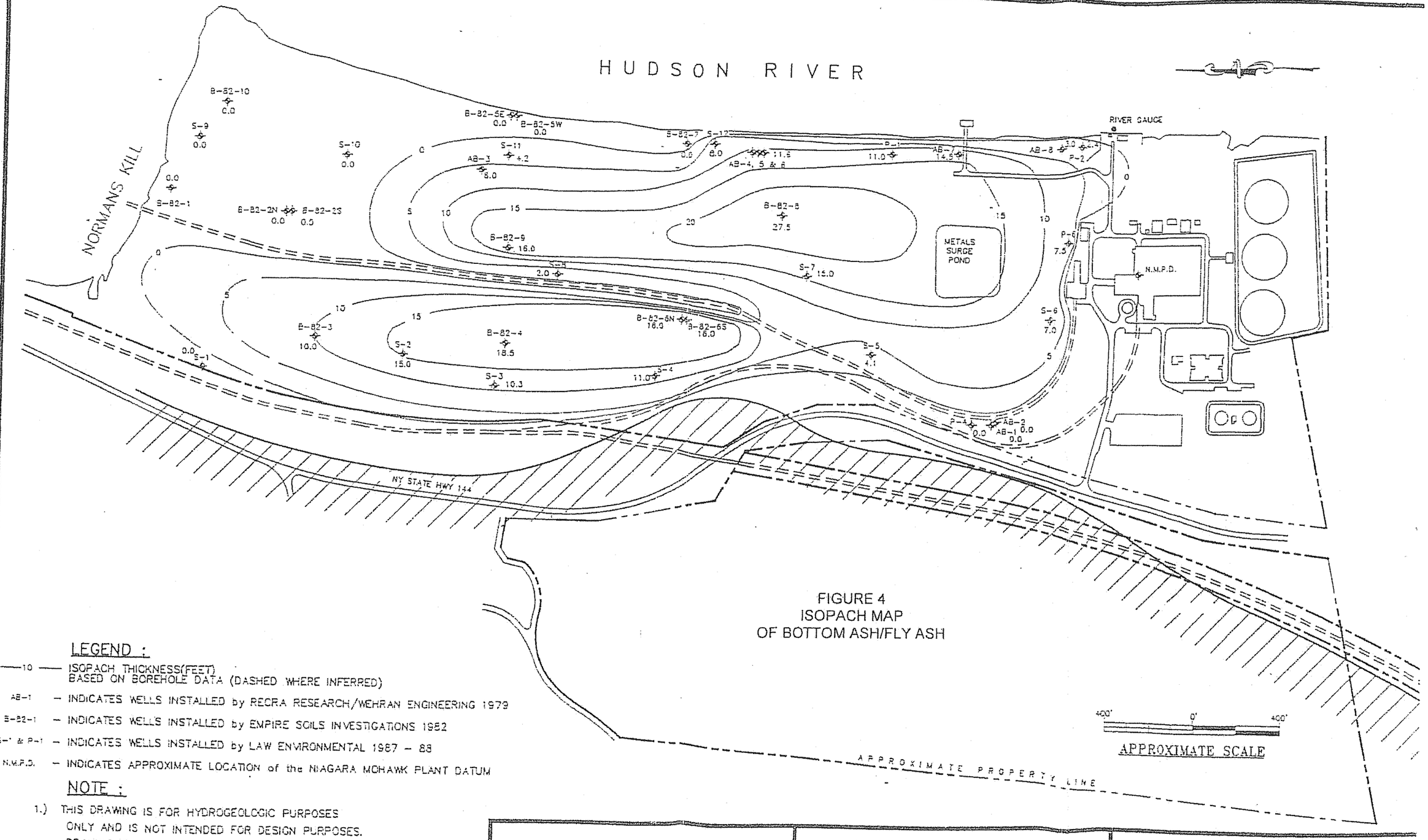


FIGURE 4
ISOPACH MAP
OF BOTTOM ASH/FLY ASH

LEGEND :

—10— ISOPACH THICKNESS(FEET) BASED ON BOREHOLE DATA (DASHED WHERE INFERRED)

AB-1 – INDICATES WELLS INSTALLED by RECRA RESEARCH/WEHRAN ENGINEERING 1979

B-82-1 – INDICATES WELLS INSTALLED by EMPIRE SOILS INVESTIGATIONS 1982

S-1 & P-1 – INDICATES WELLS INSTALLED by LAW ENVIRONMENTAL 1987 – 88

N.M.P.D. – INDICATES APPROXIMATE LOCATION of the NIAGARA MOHAWK PLANT DATUM

NOTE :

1.) THIS DRAWING IS FOR HYDROGEOLOGIC PURPOSES ONLY AND IS NOT INTENDED FOR DESIGN PURPOSES. DRAWING IS BASED ON SEVERAL REFERENCE DRAWINGS. SCALE AND LOCATION OF OBJECTS ARE APPROXIMATE.

SOURCE : MODIFIED FROM " FINAL REPORT OF ENVIRONMENTAL SUBSURFACE EXPLORATION " PREPARED by LAW in OCTOBER of 1988

NIAGARA MOHAWK
ALBANY STEAM STATION

LAW ENVIRONMENTAL CONSULTANTS Inc

ISOPACH MAP OF BOTTOM-ASH/FLY-ASH

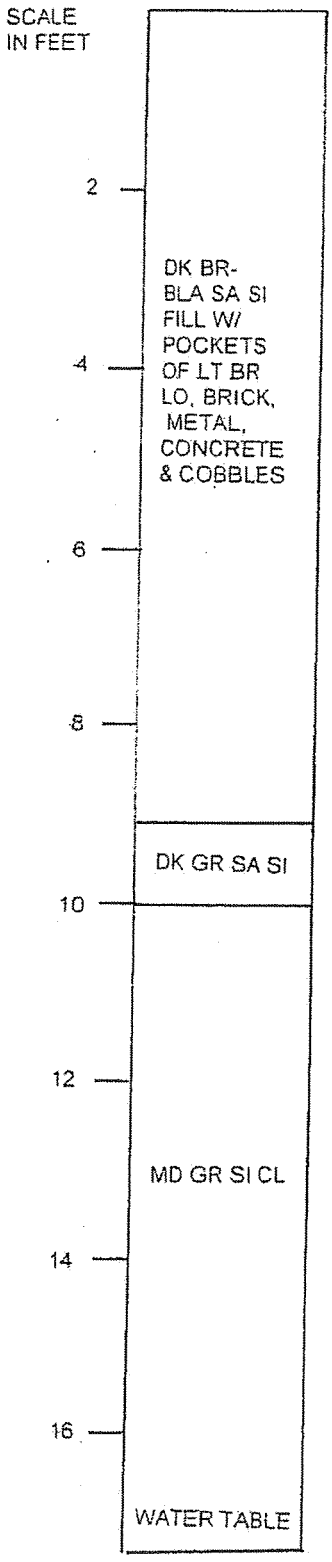


FIG. 5A
EXC. 12

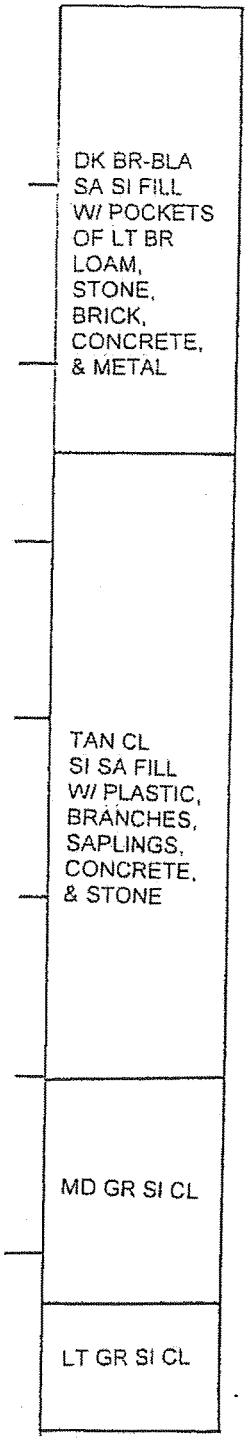


FIG. 5B
EXC. 13

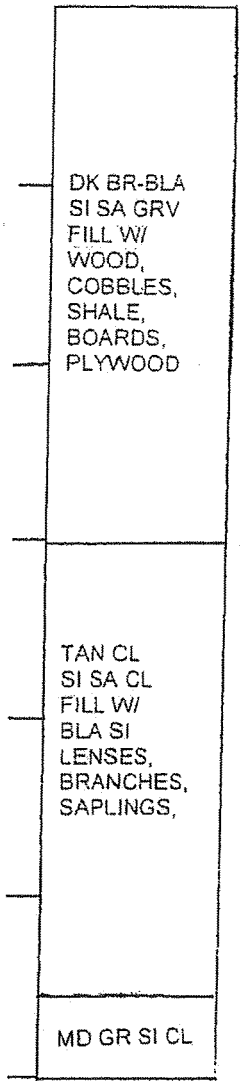


FIG. 5C
EXC. 14

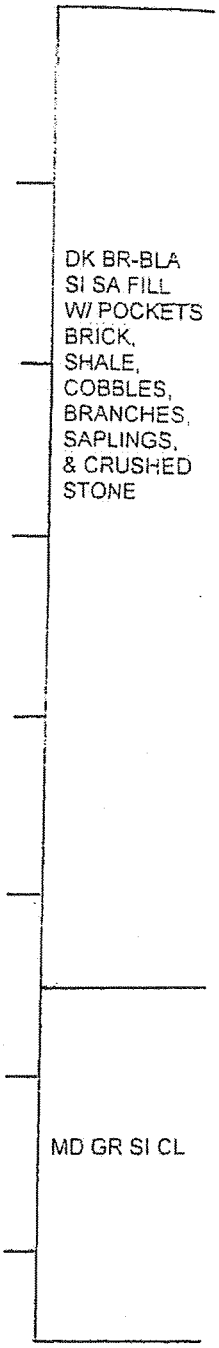


FIG. 5D
EXC. 1A

FIGURE 5
SCHEMATIC REPRESENATATIONS OF SOIL STRATIGRAPHY
BASED UPON MEASUREMENT

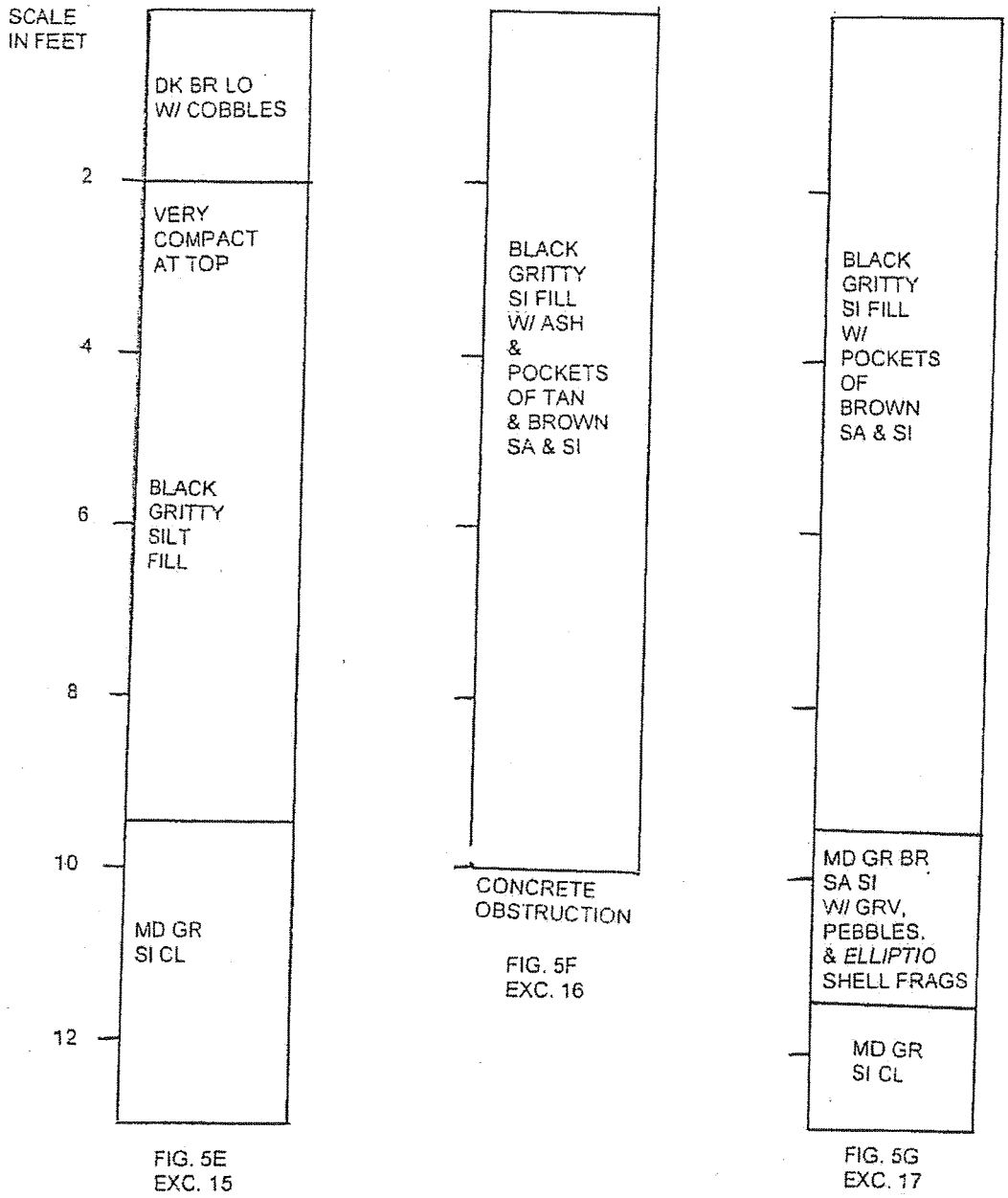


FIGURE 5 (CONTINUED)
SCHEMATIC REPRESENATATIONS OF SOIL STRATIGRAPHY
BASED UPON MEASUREMENT

APPENDIX C: AVAILABLE SOIL BORING LOGS

DATE
STARTED 5/21/79
FINISHED 5/31/79
SHEET 1 OF 1

EMPIRE SOILS INVESTIGATIONS, INC.

SUBSURFACE LOG

HOLE NO B-2
SURF ELEV 101.03
G W DEPTH See Note 1

PROJECT Niagara-Mohawk 8062 LOCATION Albany, New York

DEPTH	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER (0 / 6 / 12 / 18 / N)	RECOVERY LENGTH	SOIL OR ROCK CLASSIFICATION	NOTES
0		1	1 2 5		TOPSOIL - 3"	NOTE 1: Ground WATER at 16.6' on 6/7/79.
			5 4 10		FILL - CLAY & SILT	
					FILL - BOTTOM ASH (Moist)	NOTE 2: Ground water monitoring well installed to 21.5' with a 3.5' stickup.
5		2	5 6 11		F	
10		3	2 2 3 4 5		Stratum becomes wet.	
		4	10 11 18 10 29		FILL - FLYASH and BOTTOM ASH	
15		5	2 2 2 2 4		(Moist to wet - loose to firm) WET TO SATURATED	Brown to Black m.S with Organics
					Grey fine SAND, trace silt with a gravel layer from 17.4' to 18.8'	
20		6	17 10 11 14 21		(Wet - firm) SATURATED	
					Boring Complete at 22.0 feet	
25						
30						
35						
40						

N = No blows to drive 2 " spoon 12 " with 140 lb pin wt falling 30 "per blow
C = No blows to drive _____ " casing _____ " with _____ lb weight falling _____ "per blow

CLASSIFICATION Visual By Driller

DATE
STARTED 6/1/79
FINISHED 6/1/79
SHEET 1 OF 2

EMPIRE SOILS INVESTIGATIONS, INC.

SUBSURFACE LOG

HOLE NO B-5
SURF ELEV 101.00
C W DEPTH See Note *

PROJECT Niagara-Mohawk 9062
LOCATION Albany, New York

DEPTH	SAMPLES	SAMPLE TYPE	BLOWS ON SAMPLER 0/6 6/12 12/18 N	RECOVERY LENGTH	SOIL OR ROCK CLASSIFICATION	NOTES
			1 2 4		TOPSOIL - 5"	
			5 3 9		FILL - CLAY and SILT ORGANICS	NOTE 1: Ground WATER at 18.8' on 6/7/79.
5			2 6 5		FILL - FLYASH	NOTE 2: Ground water monitoring well installed to 51.5' with a 3.5' stickup.
			6 7 11			
10			3 11 6		FILL - FLYASH and BOTTOM ASH	
			5 5 11		FILL - FLYASH, CLAY, WOOD, brick	
			4 7 11		(Moist - loose to firm) F	
15			11 13 22			
			5 1 2		Grey Organic SILT, little fine to medium Sand	
			1 2 3		(Wet - loose) NO JAR RS ? 15'	
20					Grey fine to medium SAND, little Silt	
			6 5 5		Grey m-FS ± $	
			3 3 8			
25					RAL $	
			7 2 3			
			4 7 7			
30					Silt content decreases ? 30' ?	
			R 6 5			
			5 5 10		c-FS, f-FG, ± $	
35					(trace Organics)	
			9 3 4			
			4 4 8		RAL S	
40						

N = No blows to drive 2 " spoon 12 " with 140 lb sinker falling 30 " per blow
C = No blows to drive ____ " casing ____ with ____ lb weight falling ____ " per blow

CLASSIFICATION Visual By Driller

DATE
STARTED 6/1/79
FINISHED 6/1/79
SHEET 2 OF 2

EMPIRE SOILS INVESTIGATIONS, INC.

SUBSURFACE LOG

HOLE NO B-5 (Cont.)
SURF ELEV
C W DEPTH

PROJECT Niagara-Mohawk 9062
LOCATION Albany, New York

DEPTH FEET	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0/6 6/12 12/18 N	RECOVERY (CASING)	SOIL OR ROCK CLASSIFICATION	NOTES
45	9		10 3 3 / 3 4 6		Grey fine to coarse SAND, trace silt (Wet - loose) RAPs	
	11		3 4 / 4 3 8			
50	12		2 2 / 2 3 4		Grey CLAY, little Silt, trace fine sand Sy C, l fS, trfe	
55	13		1 2 / 1 2 3			
60	14		1 1 / 2 2 3		(Saturated - soft) GL	
65					Boring Complete at 62.0 feet	
70						
75						
80						

N = No blows to drive 2 " spoon 12 " with 140 lb pin wt falling 30 per blow
C = No blows to drive ____ " casing ____ " with ____ lb weight falling ____ " per blow

CLASSIFICATION Visual By
Driller

DATE
STARTED 6/6/79
FINISHED 6/6/79
SHEET 1 OF 1

EMPIRE SOILS INVESTIGATIONS, INC.

SUBSURFACE LOG

HOLE NO B-6
SURF ELEV 101.37
G W DEPTH See Note 1

PROJECT Niagara-Mohawk 9062
LOCATION Albany, New York

BLOWS ON SAMPLER	SOIL OR ROCK CLASSIFICATION	NOTES
1 3 6 / 5 5 11	FILL - CLAY and SILT (Damp - medium)	NOTE 1: Ground WATER at 18.6' on 6/7/79.
2 9 5 / 5 5 10	FILL - FLYASH (Moist - loose to firm)	NOTE 2: Ground water monitoring well installed to 35' with a 3' stickup.
3 12 9 / 5 5 14	F 18'	
4 1 2 / 2 2 4 / 5 2 3 / 3 3 6	Grey organic SILT, some fine Sand with Sand lenses R.S 6-6½" ?	
6 1 2 / 3 2 5	Grey - brown m-f S & Cy$ SATURATED RAPS 26'6"	
7 13 3 / 3 4 6	(Wet - loose)	
8 5 5 / 7 10 12	Grey fine to medium SAND, trace silt and gravel (Wet - firm to loose) Some f G RAPS	
9 2 2 / 2 2 4	Boring Complete at 37.0 feet ← SAND RAPS	

N = No blows to drive 2 in spoon 12 with 140 lb pin wt falling 30 in per blow
C = No. blows to drive ___ in casing ___ with ___ lb weight falling ___ in per blow

CLASSIFICATION Visual By Driller

DATE
STARTED 8/18/82
FINISHED 8/20/82
SHEET 1 OF 3

EMPIRE SOILS INVESTIGATIONS INC.

SUBSURFACE LOG

HOLE NO. B-82-1
SURF. ELEV. NA
G. W. DEPTH NA

PROJECT Proposed Ash Disposal Area
Niagara Mohawk - Albany Station

LOCATION Glenmont N.Y.

DEPTH	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOWS ON CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
0		1	4	3				Grey silty CLAY	
			4	4		7			
								(Moist-Loose) 4.0'±	
5		2	8	7				Dark Grey fine SAND and SILT	
			7	8		14			
								(Moist-Firm) 10.0'±	
10		3	5	2				Dark Grey SILT, trace fine sand	
			3	3		5			
								(Moist to Wet-Loose) 15.0'±	
15		4	7	5				Dark Grey fine SAND, little silt	
			6	8		11		(Wet-Firm)	
20		5	3	4				with trace clay seam	
			4	7		9			
25		6	4	4				GRADES and fine to medium to fine sand, trace to little silt	
			7	7		11		(Saturated-Firm)	
30		7	5	5				GRADES same with little coarse SAND and fine GRAVEL	
			4	5		9		(Saturated-Loose)	
35		8	6	6				trace silt	
			9	13		15			
40								(Wet-Loose to Firm) 40.0'±	

N = No blows to drive 2 " spoon 12 " with 140 lb pin wt falling 30 "per blow CLASSIFICATION Visual by
C = No blows to drive ____ " casing ____ " with ____ lb weight falling ____ "per blow Geotechnical Engineer

DATE
STARTED 8/18/82
FINISHED 8/20/82
SHEET 2 OF 3

EMPIRE SOIL INVESTIGATIONS INC

SUBSURFACE LOG

HOLE NO B-82-1 cont'd
SURF. ELEV NA
C. W DEPTH NA

PROJECT Proposed Ash Disposal Area
Niagara Mohawk - Albany Station

LOCATION Glenmont N.Y.

DEPTH	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0/6 6/12 12/18 N	BLOWS ON CASING	SOIL OR ROCK CLASSIFICATION	NOTES
40	S	5	5 4		Grey layered silty CLAY & clayey SILT	
			5 4	9		
		T1	Pushed 24"			
			No Rec.			
		T2	Pushed 24"			
45			No Rec.			
		T3	Pushed 24"		- clayey SILT with silty CLAY seams	
			Rec 16"			
		T4	Pushed 24"			
			Rec 24"			
50		T5	Pushed 24"			
			No Rec.			Vane Shear test Conducted @ 54.0'
55						
60		T6	Pushed 24"			
			No Rec.			
65					65.0'±	
	10	WR	9		Dark Grey SILT with clayey silt seams	
		5	4	14		
	11	7	10			
		10	10	20		
70						
			51		(Wet-Firm) 71.5'±	Vane Shear test Conducted @ 71.0'
	12	21	12	33	Grey fine to coarse SAND, trace gravel, trace to little silt	
		14				
75	13	16	17	-		
		30	18	47		
80						

N = No blows to drive 2 " spoon 12 " with 140 lb pin wt falling 30 "per blow
C = No blows to drive ____ " casing ____ " with ____ lb weight falling ____ "per blow

CLASSIFICATION Visual by Geotechnical Engineer

DATE
STARTED 8/18/82
FINISHED 8/20/82
SHEET 3 OF 3

EMPIRE SOILS INVESTIGATIONS INC

SUBSURFACE LOG

HOLE NO. B-82-1 cont'd
SURF ELEV. NA
C. W DEPTH NA

PROJECT Proposed Ash Disposal Area
Niagara Mohawk - Albany Station

LOCATION Glenmont N.Y.

DEPTH FT	SAMPLE TYPE	SAMPLE NO	BLOWS ON SAMPLER 0/6 6/12 12/18 N	BLOWS PER CASING	SOIL OR ROCK CLASSIFICATION	NOTES
80		14	50/.3 35/.2	60	Dark Grey medium to fine GRAVEL and ROCK FRAGMENTS. Some coarse to fine Sand and Silt. (Wet-Very Compact)	
85		15	100/.1		Dark Grey ROCK FRAGMENTS	
90		16	100/.1		Grades same with Some Silt and Clay (Wet-Very Compact)	
95					Boring Terminated @ 95.0'	

N = No blows to drive 2 " spoon 12 " with 140 lb pin wt falling 30 "per blow
C = No blows to drive ____ " casing ____ with ____ lb weight falling ____ "per blow
METHOD OF INVESTIGATION 3¼" ID Hollow Stem Auger Casing

CLASSIFICATION Visual by Geotechnical Engineer

DATE
STARTED 8-19-82
FINISHED 8-19-82
SHEET 1 OF 2

EMPIRE SOIL INVESTIGATIONS INC

SUBSURFACE LOG

HOLE NO. B-82-2
SURF. ELEV NA
G. W. DEPTH NA

PROJECT Proposed Ash Disposal Area
Niagara Mohawk-Albany Station

LOCATION Glenmont, New York

DEPTH FEET	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0/6	6/12	12/16	N	BLOWS ON CASING, C	SOIL OR ROCK CLASSIFICATION	NOTES
0		1	1	2	5	7		Brown fine SAND & SILT (Damp-Loose)	
5		2	5	7	7	14		grades with trace clay (Damp-Firm)	
10		3	2	1	1	2		Dark Grey fine SAND & SILT (Moist-Loose)	
15		4	8	7	7	14		Dark Grey fine to coarse SAND, Some Silt (Saturated-Firm)	
20		5	1	1	1	2		grades trace silt, Loose	
25		6	8	9	8	17		grades trace silt, Loose	
30		7	10	9	10	19		grades trace clay & organics (Saturated-Firm)	
35		8	3	2	3	5		Grey SILT, CLAY & fine to medium SAND, CLAY (Saturated-Soft)	
40									

N = No blows to drive 2 " spoon 12 " with 140 lb pin wt falling 30 "per blow

C = No blows to drive ____ " casing ____ " with ____ lb weight falling ____ "per blow

CLASSIFICATION Visual by Geotechnical Engineer

METHOD OF INVESTIGATION 3 3/4"I.D. Hollow Stem Auger Casing

DATE
STARTED 8-19-82
FINISHED 8-19-82
SHEET 2 OF 2

EMPIRE SOILS INVESTIGATIONS INC

SUBSURFACE LOG

HOLE NO B-82-2 cont'd
SURF ELEV. NA
G.W. DEPTH NA

PROJECT Proposed Ash Disposal Area
Niagara Mohawk-Albany Station

LOCATION Glenmont, New York

DEPTH FT	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER (6" / 6" / 6")	N	BLOWS ON CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
40		9	PUSHED 24"				
			REC. 9"				
		10	PUSHED 24"				
			REC. 6"				
45		11	PUSHED 24"				
			REC. 9"				
		12	PUSHED 24"				
			REC. 24"				
		13	PUSHED 24"				
			REC. 15"				
50							
		14	PUSHED 24"			Grey SILT & CLAY, trace sand	
			NO REC.				
55						Boring Terminated @ 55.0'	
60							

DATE
STARTED 8-19-82
FINISHED 8-19-82
SHEET 1 OF 1

EMPIRE SOIL INVESTIGATIONS INC

SUBSURFACE LOG

HOLE NO. B-82-3
SURF. ELEV NA
G. W. DEPTH NA

PROJECT Proposed Ash Disposal Area
Niagara Mohawk-Albany Station

LOCATION Glenmont, New York

DEPTH IN FEET	SAMPLE NO.	SAMPLE TYPE	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOWS ON CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
0	1		2	2	1	3		Black FLY ASH & FIBROUS ORGANICS (Moist)	
5	2		1	1	1	2		Dark Grey to Black FLY ASH, trace ORGANICS (Wet)	
10	3		WH	WH	1	1		(Moist to Wet-Loose) 10.0'± Dark Brown ORGANIC SILT, trace fibrous organics (Wet-Loose) 15.0'±	
15	4		5	5	5	10		Dark Grey medium to fine SAND, trace to little silt (Saturated-Loose) 20.0'±	
20	5		14	6	9	15		Grey fine SAND, Some Silt, trace fibrous organics (Wet-Firm) 22.5'±	
25	6		19	13	21	34		Grey SILT & fine SAND, trace rock fragments (Wet-Compact) Grey SILT & ROCK FRAGMENTS (Moist)	
	7		100/.1'					Boring Terminated @ 27.1'	
30									
35									

N = No blows to drive 2" spoon 12" with 140 lb pin wt falling 30" per blow

C = No blows to drive ____" casing ____" with ____ lb weight falling ____" per blow

METHOD OF INVESTIGATION 3 3/4" I.D. Hollow Stem Auger Casing

CLASSIFICATION Visual by Geotechnical Engineer

DATE
STARTED 8-16-82
FINISHED 8-16-82
SHEET 1 OF 2

EMPIRE SOILS INVESTIGATIONS INC

SUBSURFACE LOG

HOLE NO. B-82-4
SURF. ELEV NA
C. W. DEPTH 16' At Completion

PROJECT Proposed Ash Disposal Area
Niagara Mohawk-Albany Station

LOCATION Glenmont, New York

DEPTH	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOWS ON CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
0		1	1	2	1	3		Dark Grey FLY ASH w/trace organics (Damp-Loose)	
5		2	1	1	0	1		Black FLY ASH (Moist-Loose)	
10		3	WT. OF ROD					grades Same (Moist-Loose)	
15		4	1	0	0	0		Dark Grey FLY ASH (Saturated-Loose) 18.5'±	Change in Augers At 18.5'
20		5	2	5	5	10		Medium Grey fine to medium SAND & SILT, Some Clay (Saturated-Loose)	
25		6	7	6	7	13		grades Same w/trace clay	
30		7	-	2	4	6		(Saturated-Firm) 30.5'± Grey CLAY w/trace silt (Wet-Medium)	
		8	-	-	4	4		grades Same w/Some Silt & trace fine sand partings (Wet-Soft)	
35		9	2	3	3	6		grades Same (Wet-Medium)	
		10	3	3	3	6		Grey CLAY w/trace SILT (Moist-Medium)	
		11	-	3	4	7		grades Same w/Some Silt (Wet-Medium)	
40									

N = No blows to drive 2" spoon 12" with 140 lb pin wt falling 30" per blow
C = No blows to drive ____" casing ____" with ____ lb weight falling ____" per blow
METHOD OF INVESTIGATION 3 3/4" I.D. Hollow Stem Auger Casing

CLASSIFICATION Visual by Geotechnical Engineer

DATE
STARTED 8-16-82
FINISHED 8-16-82
SHEET 2 OF 2

EMPIRE SOIL INVESTIGATIONS INC

SUBSURFACE LOG

HOLE NO B-82-4 cont'd
SURF ELEV NA
G. W DEPTH 16' At Completion.

PROJECT Proposed Ash Disposal Area
Niagara Mohawk-Albany Station

LOCATION Glenmont, New York

DEPTH	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOWS ON CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
40									
45			12	4	4	5	9	grades Same (Wet-Soft)	
								Boring Terminated @ 46.5'	

N = No blows to drive 2 " spoon 12 " with 140 lb pin wt falling 30 "per blow

C = No blows to drive ____ " casing ____ " with ____ lb weight falling ____ "per blow

METHOD OF INVESTIGATION 3 3/4" I.D. Hollow Stem Auger Casing

CLASSIFICATION Visual by Geotechnical Engineer

DATE
STARTED 6-27-83
FINISHED 8-31-83
SHEET 1 OF 3

EMPIRE SOILS INVESTIGATIONS, INC.

SUBSURFACE LOG

HOLE NO B-5
SURF ELEV
G. W DEPTH

PROJECT Proposed Ash Disposal Area
Niagara Mohawk-Albany Station

LOCATION Glenmont, New York

DEPTH	SAMPLE	SAMPLE NO	BLOWS ON SAMPLER	BLOWS PER 6"	SOIL OR ROCK CLASSIFICATION	NOTES
0						
5			1 4 4	8	Brown fine-medium SAND, little silt (Moist-Loose)	
10			2 3 3	8	11.0'	
					Gray fine-medium SAND, little silt (Wet-Loose)	
15			3 2 5	11	grades Dark Brownish-Gray fine SAND	
20			4 5 4	11	grades fine to coarse SAND	
25			5 5 7	14	grades trace fine-coarse gravel	
30			6 5 3	6	31.0'	
					Gray CLAY & varved SILT (Wet-Medium)	
35			7 8 9	17		
40			10			

N = No blows to drive 2 in sampler 12 with 140 lb pile wt falling 30 per blow

C = No blows to drive casing in with lb weight falling per blow

CLASSIFICATION Visual by Geotechnical Engineer

DATE
STARTED 8-27-82
FINISHED 8-31-82
SHEET 2 OF 3

EMPIRE SOILS INVESTIGATIONS INC

SUBSURFACE LOG

HOLE NO B-5 cont'd
SURF ELEV
G.W DEPTH

PROJECT Proposed Ash Disposal Area
Niagara Mohawk-Albany Station

LOCATION Glenmont, New York

DEPTH	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0"/6" 6"/12" 12"/18" N	BLOWS ON CASING	SOIL OR ROCK CLASSIFICATION	NOTES
40						
		11				
		V1				
45		V2				
50		12				
55		V3				
60		13				Penetrometer Reading: 0.6 Tsf
65		V4				
70		14				Penetrometer Reading: 0.75 Tsf
75		V5				
80						

N = No. blows to drive 2 spoon 12 with 140 lb. pin wt. falling 30 per blow

( ) No. blows to drive ... using ... with ... lb. weight falling ... per blow

CLASSIFICATION Visual by Geotechnical Engineer

DATE
STARTED 8-18-82
FINISHED 8-18-82
SHEET 1 OF 2

EMPIRE SOILS INVESTIGATIONS INC

SUBSURFACE LOG

HOLE NO B-82-6
SURF. ELEV NA
C. W. DEPTH See Notes Below

PROJECT Proposed Ash Disposal Area
Niagara Mohawk-Albany Station

LOCATION Glenmont, New York

DEPTH FEET	SAMPLES	SAMPLE NO	PENETRATION SAMPLER 0"/6"	6"/12"	12"/18"	N	RECOVERY LENGTH	SOIL OR ROCK CLASSIFICATION	NOTES
0		1	1	2	2	4		Black FLYASH, trace fiberous (Damp-Soft)	
5		2	2	2	3	5		grades with no fiberous (Moist-Osft)	
10		3	1	WR	WR	0		grades, Wet, very soft	
15		4	WR	WR	1	1		Dark Grey sandy SILT (Wet-Very Soft)	
20		5	7	5	2	7		Dark Grey fine to coarse SAND, Some Silt, trace organics (Wet-Loose)	
25		6	5	3	5	8		grades fine to medium SAND & SILT, trace organics (Wet-Loose)	
30		7	9	9	7	16		grades fine SAND & SILT (Saturated-Firm)	
35		8	WR	4	6	10		Grey silty CLAY, varved (Wet-Medium)	
40		9	PUSHED 24" REC. 8"						

N = No blows to drive 2 spoon 12 with 140 lb pin wt falling 30 per blow

C = No blows to drive ... casing ... with ... lb weight falling ... per blow

CLASSIFICATION Visual by Geotechnical Engineer

DATE
STARTED 8-18-82
FINISHED 8-19-82
SHEET 2 OF 2

EMPIRE SOILS INVESTIGATIONS INC

SUBSURFACE LOG

HOLE NO B-6 cont'd
SURF. ELEV NA
G. W. DEPTH

PROJECT Proposed Ash Disposal Area
Niagara Mohawk-Albany Station

LOCATION Glenmont, New York

DEPTH IN FEET	SAMPLE NO.	SAMPLE TYPE	BLOWS ON SAMPLER (0"/6" / 6"/12" / 12"/18" / N)	RECOVERY IN INCHES	SOIL OR ROCK CLASSIFICATION	NOTES
40	10				silty CLAY, Some fine Sand Seams	
	11					
45	12					
	13					
	14				Grey layered and laminated clayey SILT & silty CLAY w/several ½" or less sandy silt layers (CL)	
50						
	15				Grey varved & laminated silty CLAY, Some layering (CL)	
55					Boring Terminated @ 55.0'	

N = No blows to drive 2 spoon 12 with 140 lb pin wt falling 30 per blow

C = No blows to drive casing with lb weight falling per blow

CLASSIFICATION Visual by Geotechnical Engineer

2 3/4" Rolling Stem Auger Casing

DATE
STARTED 8-18-82
FINISHED 8-18-82
SHEET 1 OF 2

EMPIRE SOIL INVESTIGATIONS INC

SUBSURFACE LOG

HOLE NO B-82-7
SURF. ELEV NA
G. W. DEPTH NA

PROJECT Proposed Ash Disposal Area
Niagara Mohawk-Albany Station

LOCATION Glenmont, New York

DEPTH FEET	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0/6	6/12	12/18	N	RECOVERY CASE NO	SOIL OR ROCK CLASSIFICATION	NOTES
0		1	3	18	26	44		Dark Brown fine SAND & SILT, little coarse sand & fine gravel, trace organics	
								(Damp-Compact) 5.0'±	
5		2	7	7	7	14		Dark Brown SILT, Some fine Sand,	
								(Damp-Firm) 10.0'±	
10		3	8	12	8	20		Dark Brown medium to fine SAND, Some Silt, trace fibrous organics	
								(Moist-Firm) 15.0'±	
15		4	WR	2	3	5		Dark Grey fine SAND & SILT (Wet)	
20		5	5	5	7	12		grades same	
								(Wet-Loose to Firm) 25.0'±	
25		6	WR	WR	1	1		Dark Grey fine to medium SAND, trace silt, trace fibrous organics (Saturated-Loose)	
30		7	5	5	7	12		grades with trace clay seam (Saturated-Firm)	
35		8	6	7	5	12		Dark Brown medium to fine SAND, trace silt (Saturated-Firm)	
40									

N = No blows to drive 2 " spoon 12 " with 140 lb pin wt falling 30 " per blow

C = No blows to drive _____ " casing _____ " with _____ lb weight falling _____ " per blow

CLASSIFICATION Visual by Geotechnical Engineer

DATE
STARTED 8-18-82
FINISHED 8-18-82
SHEET 2 OF 2

EMPIRE SOIL INVESTIGATIONS INC

SUBSURFACE LOG

HOLE NO B-82-7 cont'd
SURF. ELEV NA
G. W. DEPTH NA

PROJECT Proposed Ash Disposal Area
Niagara Mohawk-Albany Station

LOCATION Glenmont, New York

DEPTH FEET	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0/6 6/12 12/18 N	BLOWS PER CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
40		9	5 9 9 18		grades same (Saturated-Firm)	
45						

N = No blows to drive 2 " spoon 12 " with 140 lb pin wt falling 30 " per blow

C = No blows to drive _____ casing _____ " with _____ lb weight falling _____ " per blow

CLASSIFICATION Visual by Geotechnical Engineer

DATE
STARTED 8/26/82
FINISHED 8/26/82
SHEET 1 OF 2

EMPIRE SOIL INVESTIGATIONS INC

SUBSURFACE LOG

HOLE NO B-82-8
SURF ELEV
C W DEPTH

PROJECT Proposed Ash Disposal Area
Niagara Mohawk-Albany Station

LOCATION Glenmont, New York

DEPTH	SAMPLES	SAMPLE NO	BLOWS/6" SAMPLER 0-6" / 6-12" / 12-18"	BLOWS/FT CASING	SOIL OR ROCK CLASSIFICATION	NOTES
0		1	1 1 1	2	Black FLY ASH (Moist-Loose)	
5		2	2 2 3	5	grades Same (Moist-Loose)	
10		3	1 1 1	2	grades Same (Wet-Loose)	
15		4	WR WR WR	-	grades Same (Wet-Loose)	
20		5	WR WR WR	-	grades Same (Saturated-Loose)	
25		6	WR WR WR	-	-grades Same (Saturated-Loose) 27.5'	
					Gray SILT, Some very fine Sand (Saturated-Loose) 31.0'	Change @ 27.5'
30		7	5 3 3	5	Gray fine SAND, trace silt, trace coarse sand (Saturated-Loose) 37.5'	
35		8	8 WR WR	-	Gray SILT & CLAY	Change @ 37.5'
40						

N = No Blows to drive 2 in. sp.oon 13 in. with 140 lb pin wt falling 30 in. per blow

C = No Blows to drive ____ in. casing ____ in. with ____ lb weight falling ____ in. per blow

CLASSIFICATION Visual by Geologist

DATE
STARTED 8/26/82
FINISHED 8/26/82
SHEET 2 OF 2

EMPIRE SOILS INVESTIGATIONS, INC.

SUBSURFACE LOG

HOLE NO B-82-8 cont'd
SURF ELEV
G.W. DEPTH

PROJECT Proposed Ash Disposal Area
Niagara Mohawk-Albany Station

LOCATION Glenmont, New York

DEPTH	SAMPLES	SAMPLE NO	BETWEEN SAMPLES 0" / 6"	6" / 12"	12" / 18"	N	BLOWS PER CASING	SOIL OR ROCK CLASSIFICATION	NOTES
40		9	1	1				grades Same (Saturated-Soft)	
				3	4	4			
		10	WR	WR				grades Same (Saturated-Soft)	
				3	2	3			
45		11	WR	WR				grades Same, trace seam of fine sand (Saturated-Very Soft	
				WR	WR	-			
		12							No Recovery
		13	WR	3				grades Same, trace silt and fine Sand seam (Saturated-Medium)	
50				4	5	7			
55		14	5	5	6	11		grades Same (Saturated-Medium)	
								Boring Terminated @ 56.5'	
60									

N = No blows to drive 2 in spoon 12 with 140 lb pin wt falling 30 per blow

C = No blows to drive casing with lb weight falling per blow

CLASSIFICATION Visual by Geologist

DATE
STARTED 8/26/82
FINISHED 8/26/82
SHEET 1 OF 2

EMPIRE SOILS INVESTIGATIONS INC

SUBSURFACE LOG

HOLE NO B-82-9
SURF ELEV
G W DEPTH

PROJECT Proposed Ash Disposal Area
Niagara Mohawk-Albany Station

LOCATION Glenmont, New York

DEPTH	SAMPLES	SAMPLE #	BLOWS IN 6" INCREMENTS	BLOWS PER 6" LAST 12"	SOIL OR ROCK CLASSIFICATION	NOTES
0		1	1 2 3 5		Dark Gray FLY ASH, Some Organics (Dry-Loose)	
5		2	3 1 1 2		Black FLY ASH (Damp-Loose)	
10		3	1 2 1 2		Black FLY ASH, Some Silt (Damp-Loose) grades to Sandy SILT	
15		4	2 3 6 9		16.0' Gray fine SAND and SILT (Saturated-Loose)	
20		5	5 8 8 16		grades to fine SAND, Some Silt (Saturated-Firm)	
25		6	WR WR 2 2		Gray fine-coarse SAND, trace - Some Silt, trace gravel (Saturated-Loose)	
30		7	26 27 10 37		grades Same, thin layer fine SAND and SILT (Saturated-Compact)	
35		8	WR WR WR -		grades Same, trace silt and clay (Saturated-Loose)	
40						

N = No blows to drive 2 in. spoon, 12 in. with 140 lb. pre wt. falling 30 in. per blow

C = No blows to drive ___ in. casing ___ in. with ___ lb. weight falling ___ in. per blow

CLASSIFICATION Visual by Geologist

DATE
STARTED 8/26/82
FINISHED 8/26/82
SHEET 2 OF 2

EMPIRE SOILS INVESTIGATIONS INC

SUBSURFACE LOG

HOLE NO B-82-9
SURF ELEV
G. W. DEPTH

PROJECT Proposed Ash Disposal Area
Niagara Mohawk-Albany Station

LOCATION Glenmont, New York

DEPTH	SAMPLE	SAMPLE NO	BLOWS ON SAMPLER 0"/6"	6"/12"	12"/18"	BLOWS PER 6"	SOIL OR ROCK CLASSIFICATION	NOTES
40							grades Same (Saturated-Firm) 41.5'	
		9	15	10	4	14	Gray SILT & CLAY, trace fine sand	
		10	10	7			grades to CLAY, Some Silt, Varved	
45				5	5	12	(Saturated-Medium)	
		11	WR	WR			grades to SILT & CLAY	
				WR	4	-	(Saturated-Very Soft)	
		12	3	3				
				4	3	7		
50		13	5	2			grades same, alternating seams fine	
				4	4	6	Sand & Silt and Silty Clay	
		14	1	1			(Saturated-Medium)	
				3	4	4	grades to Silty CLAY, Some seams	
							Clayey Silt	
55							(Saturated-Soft)	
		15	WR	6			Gray SILT, alternating layers of Silt	
				5	5	11	and very fine Sand & Silty Clay	
60							(Saturated-Medium)	
							Boring Terminated @ 60.0'	

N = No blows to drive 2 in. spoon 12 in. with 140 lb. pin wt. falling 30 in. per blow

( ) No blows to drive ___ in. casing ___ in. with ___ lb. weight falling ___ in. per blow

CLASSIFICATION Visual by Geologist

DATE
STARTED 8/24/82
FINISHED 8/25/82
SHEET 1 OF 2

EMPIRE SOILS INVESTIGATION INC.

SUBSURFACE LOG

HOLE NO. B-82-10
SURF. ELEV
G W DEPTH

PROJECT Proposed Ash Disposal Area
Niagara Mohawk-Albany Station

LOCATION Glenmont, New York

DEPTH	SAMPLES	CASING BLOWS	BLOWS ON SAMPLER (0"-6" / 6"-12" / 12"-18")	N	BLOWS PER CASING	SOIL OR ROCK CLASSIFICATION	NOTES
0	1	2	4	3	7	Gray FILL, SILT with fine-medium SAND (Damp-Loose)	
5	2	22	24	14	38	grades Same, Some Fly Ash (Damp-Compact)	
10	3	37	48	12	60	grades Same (Damp-Very Compact)	
						13.0'	Change @ 13.0'
15	4	19	15	20	45	Gray fine-medium SAND, Some Silt and Coarse Sand (Wet-Compact)	No Recovery
20	5	23	20	17	37		
25	6	2	5	7	12	Gray fine-coarse SAND & GRAVEL, Some Silt (Saturated-Firm)	
30	7	10	8	7	15	grades Same (Saturated-Firm)	
35	8	6	7	6	13	Gray fine-medium SAND (Saturated-Firm)	
40							

N = No. blows to drive 2 spoon 12 with 140 lb. pro'st falling 30 per blow

( ) No. blows to drive casing with ____ lb. weight falling ____ per blow

CLASSIFICATION Visual by Geologist

DATE
STARTED 5/24/82
FINISHED 5/25/82
SHEET 3 OF 2

EMPIRE SOILS INVESTIGATION INC

SUBSURFACE LOG

HOLE NO B-82-10 cont'd
SURF ELEV
C W DEPTH

PROJECT Proposed Ash Disposal Area
Niagara Mohawk-Albany Station

LOCATION Glenmont, New York

DEPTH	SAMPLES	TYPE OF SAMPLE	BLOWS ON SAMPLER (6" / 6" / 6" / 6")	N	BLOWS ON CASING	SOIL OR ROCK CLASSIFICATION	NOTES
40							
			9 7 5 6	12		grades Same	
45			10 5 6 5	11		grades Same	
50			11 9 7 9	16			No Recovery
55			12 2 2			56.0'	
			3 3 5			Gray SILT, Some fine Sand, Some Clay, Varved (Saturated-Soft)	
			13 WR WR				
			1 1 1			grades to SILT & CLAY, Some Silt Seams, Some very fine Sand (Saturated-Very Soft)	
60			14 10 7				
			9 16				
			15 WR WR				
			WR WR -				
			16 WR WR			grades to SILT with thin seams of Very Fine Sand & Silt (Saturated-Very Soft)	
65			WR WR -				
			17 WR WR				
			1 1 1				
70							
			18 6 6	28		Gray SILT & very fine SAND	
			22 20				
75						Boring Terminated @ 74.0'	

N = No blows to drive 2 spoon 12 with 140 lb pin wt falling 30 per blow

( ) = No blows to drive ___ casing ___ with ___ lb weight falling ___ per blow

CLASSIFICATION Visual by Geologist

LOCATION MAP

(See Figure 3)

103' FLASH

SHELL OIL COMPANY — WELL LOG

PAGE 1 OF 1

WELL NUMBER ▶ S-3	LOCATION ▶ Glenmont
DATE ▶ 12/21/87	WEATHER ▶ 30°F, Clear
LOGGED BY ▶ Goins	DRILLED BY ▶ Empire Soils Invest., Inc.
DRILLING METHOD ▶ 6¼" I.D., H.S.A.	SAMPLING METHOD ▶ Split Spoon
GRAVEL PACK ▶ #2 Whitehead	SEAL ▶ Bentonite Pellets

ELEVATION ▶ 94.9

CASING ▶ TYPE SCH 40 PVC DIAMETER 4" LENGTH 4.12' HOLE DIA 9 5/8"

SCREEN ▶ TYPE SCH 40 PVC SLOT 0.020" DIAMETER 4" LENGTH 7.99' TOTAL DEPTH 9.51'

97.36

MOISTURE CONTENT	BONDING	DENSITY	PLASTICITY	SAMPLE NO.	DEPTH	SAMPLE RECOVERY	PENETRATION RESISTANCE	LITHOLOGY/REMARKS	WELL COMPLETION
MST	POR	MED DNS	SP	1	0	0.4	2	Black to brown fine to medium GRAVEL, little	2.60
					1		3	silt little clay, trace fine to coarse sand	
							9		GC
MST SAT	WEL	MED DNS	NP	2	2	1.8	20		
							23	Black fine SAND, some silt	SM
					TOB 3		14		
							8		
VT	WEL	LSE	NP	3	4	1.2	3		
							2	Gray fine SAND, some silt	SM
					5		2		
							4		
SAT	VRY POR	MED DNS	NP	4	6	0.8	5		
							7	Gray fine SAND, some fine to medium gravel,	
					7		6	some silt	SM-GM
							5		
SAT	WEL	MED DNS	NP	5	8	0.4	5		
							14	Black fine SAND, some silt	SM
					9		9		
							2		
SAT	WEL	VRY LSE	NP	6	10	1.3	1		
							2	10-10.3 SAME, with roots	
		VRY SFT	SP		11		1		
							WH	10.3-12 Black to dark gray silty CLAY	CL
					12		1		
								Boring terminated at 12'	
					3				
					4				
					5				
					6				
					7				
					8				
					9				

LOCATION MAP

(See Figure 3)

20' FLUSH

SHELL OIL COMPANY — WELL LOG

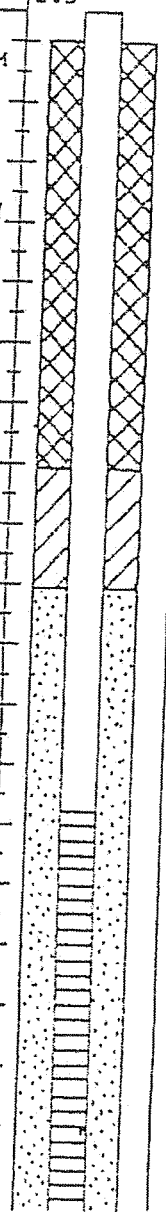
PAGE 1 OF 2

WELL NUMBER ▶ S-8	LOCATION ▶ Glenmont
DATE ▶ 12/22/87	WEATHER ▶ 40°F, Clear
LOGGED BY ▶ Goins	DRILLED BY ▶ Empire Soils Invest., Inc.
DRILLING METHOD ▶ 6¼" I.D. H.S.A.	SAMPLING METHOD ▶ Split Spoon
ELEVATION ▶ 95.3	GRAVEL PACK ▶ #1 Whitehead — SEAL ▶ Benconite Pellets

CASING ▶ TYPE SCH 40 PVC — DIAMETER 4" — LENGTH 15.24' — HOLE DIA 9 5/8"

SCREEN ▶ TYPE SCH 40 PVC — SLOT 0.020" — DIAMETER 4" — LENGTH 9.86' — TOTAL DEPTH 22.6'

MOISTURE CONTENT	KOATING	DENSITY	PLASTICITY	SAMPLE NO.	DEPTH	SAMPLE RECOVERY	PENETRATION RESISTANCE	LITHOLOGY/REMARKS	
							97.98		WELL COMPLETION
DMP	WEL	VRY LSE	NP	1	0	0.3	1	Black fine SAND, some silt	SM
					1		1		
							1		
					2		1		
DMP	VRY POR	DNS	NP	2		1.4	13	Brown fine to coarse SAND, some medium to	
					3		26	fine gravel, little silt	SW
							21		
					4		36		
MP	VRY POR	VRY DNS	NP	3		1.8	40	SAME	
					5		30		
							30		
					6		46		
DMP	VRY POR	VRY DNS	NP	4		1.8	64	Gray fine to coarse SAND, some medium to	
					7		64	fine gravel, trace silt	SW
							28		
					8		10		
DMP	WEL	VRY STF	SP /	5		1.2	22	Gray SILT and CLAY	ML-CL
					9		9		
							7		
					10		8		
DMP MST	WEL	MED STF	SP	6		1.4	7	SAME	
					11		4		
							3		
					12		4		
WET SAT	WEL	MED DNS	SP	7		1.6	4	Gray brown fine SAND, some clayey silt	SM
					TOB 13		6		
							7		
							9		
SAT	WEL	MED DNS	SP	8	14	1.7	13	Brown fine SAND, some clayey silt	SM
					15		14		
							13		
					16		15		
AT	WEL	MED DNS	NP	9		1.8	8	Brown medium to fine SAND, trace silt	SP
					17		5		
							8		
					18		16		
SAT	WEL	MED DNS	NP	10		2.0	5	Brown medium to fine SAND	SP
					19		5		
							7		



S-1278? (1-65)

LOCATION MAP

(See Figure 3)

SHELL OIL COMPANY — WELL LOG

WELL NUMBER ▶ S-8	LOCATION ▶ Glenmont
DATE ▶	WEATHER ▶
LOGGED BY ▶	DRILLED BY ▶
DRILLING METHOD ▶	SAMPLING METHOD ▶
ELEVATION ▶ 95.3	GRAVEL PACK ▶
	SEAL ▶

CASING ▶ TYPE DIAMETER LENGTH HOLE DIA

SCREEN ▶ TYPE SLOT DIAMETER LENGTH TOTAL DEPTH

MOISTURE CONTENT	BORING	DENSITY	PLASTICITY	SAMPLE NO.	DEPTH	SAMPLE RECOVERY	PENETRATION RESISTANCE	LITHOLOGY/REMARKS	WELL COMPLETION
					97.98				
SAT	WEL	MED DNS	NP	11	20	2.0	7	Brown medium to fine SAND	SP
					21		3		
					22		3		
					3		4	Boring terminated at 22.6'	
					4				
					5				
					6				
					7				
					8				
					9				
					0				
					1				
					2				
					3				
					4				
					5				
					6				
					7				
					8				
					9				

LOCATION MAP

(See Figure 3)

SHELL OIL COMPANY — WELL LOG

WELL NUMBER ▶ S-10 | LOCATION ▶ Glenmont

DATE ▶ | WEATHER ▶

LOGGED BY ▶ | DRILLED BY ▶

DRILLING METHOD ▶ | SAMPLING METHOD ▶

ELEVATION ▶ 96.7 | GRAVEL PACK ▶ | SEAL ▶

CASING ▶ TYPE | DIAMETER | LENGTH | HOLE DIA

SCREEN ▶ TYPE | SLOT | DIAMETER | LENGTH | TOTAL DEPTH

MOISTURE CONTENT	BORING	DENSITY	PLASTICITY	SAMPLE NO.	DEPTH	SAMPLE RECOVERY	PENETRATION RESISTANCE	LITHOLOGY/REMARKS	WELL COMPLETION
					99.09				
SAT	WEL	MED DNS	NP	11	20	1.9	4	Brown fine to medium SAND, trace fine	
					21		6	gravel, trace silt	SP
							11		
					22		16		
								Boring terminated at 22'	
					3				
					4				
					5				
					6				
					7				
					8				
					9				
					0				
					1				
					2				
					3				
					4				
					5				
					6				
					7				
					8				
					9				

LOCATION MAP

(See Figure 3)

4.2' FLYASH

SHELL OIL COMPANY — WELL LOG

PAGE 1 OF 1

WELL NUMBER ▸ S-11	LOCATION ▸ Glenmont
DATE ▸ 12/29/87	WEATHER ▸ 20°F, Snow
LOGGED BY ▸ Liebe	DRILLED BY ▸ Empire Soils Invest., Inc.
DRILLING METHOD ▸ 6¼" I.D. H.S.A.	SAMPLING METHOD ▸ Split Spoon
ELEVATION ▸ 97.0	GRAVEL PACK ▸ #1 Whitehead
	SEAL ▸ Bentonite Pellets

CASING ▸ TYPE SCH 40 PVC DIAMETER 4" LENGTH 5.33' HOLE DIA 9 5/8"

SCREEN ▸ TYPE SCH 40 PVC SLOT 0.020" DIAMETER 4" LENGTH 4.92' TOTAL DEPTH 7.95'

MOISTURE CONTENT	SORTING	DENSITY	PLASTICITY	SAMPLE NO.	DEPTH	SAMPLE RECOVERY	PENETRATION RESISTANCE	LITHOLOGY/REMARKS	WELL COMPLETION
							99.04		2.3'
MST	POR	MED DNS	NP	1	0	1.0	2	0-0.5 Topsoil	
							2	0.5-2 Brown fine to coarse SAND, little fine to medium gravel, trace silt	SW
					1		11		
					2	1.8	7		
MST	MOD	LSE	NP	2			3	2-3 SAME	
							4	3-4 Gray black fine to coarse SAND, little silt, trace gravel	SP-SW
					3		6		
							8		
T	MOD	LSE	NP	3	4	1.5	3	SAME	
ET							3		
					5		3		
							3		
SAT	MOD	MED DNS	NP	4	6	1.6	6	6-7.2 SAME	
		VRY STF					8		
					7		11	7.2-8 Gray silty CLAY	CL
							20		
MST	WEL	VRY STF	PL	5	8	1.6	9	8-8.3 SAME	
WET							8	8.3-10 Brown fine SAND, some silt	
MST	MOD	MED DNS	NP		9		8		SM
							7		
					10			Boring terminated at 10'	
					1				
					2				
					3				
					4				
					5				
					6				
					7				
					8				
					9				

LOCATION MAP

(See Figure 3)

S-3 Figure

SHELL OIL COMPANY — WELL LOG

PAGE 1 OF 1

WELL NUMBER ▶ S-12	LOCATION ▶ Glenmont
DATE ▶ 12/22-23/87	WEATHER ▶ 40°F. Clear
LOGGED BY ▶ Liebe	DRILLED BY ▶ Empire Soils Invest., Inc.
DRILLING METHOD ▶ 6¼" I.D. H.S.A.	SAMPLING METHOD ▶ Split Spoon
ELEVATION ▶ 96.1	GRAVEL PACK ▶ #2 Whitehead
	SEAL ▶ Bentonite Pellets

CASING ▶ TYPE SCH 40 PVC DIAMETER 4" LENGTH 15.22' HOLE DIA 9 5/8"

SCREEN ▶ TYPE SCH 40 PVC SLOT 0.020" DIAMETER 4" LENGTH 8.15' TOTAL DEPTH 20.27'

MOISTURE CONTENT	SORTING	DENSITY	PLASTICITY	SAMPLE NO.	DEPTH	SAMPLE RECOVERY	PENETRATION RESISTANCE	LITHOLOGY/REMARKS	WELL COMPLETION
							99.18		3.1'
DMP	POR	DNS	NP	1	0	2.0	6	0-0.4 Topsoil	
MST					1		19	0.4-1.5 Brown f to c sand, little f to m gravel	
							21	1.5-2 Black gray f to m SAND, little fine	
MST	MOD	HRD	SP	2	2		23	gravel, trace silt SW	
		DNS	NP			2.0	8	2-2.5 Red clayey SILT ML	
					3		14	2.5-4 Black gray fine to medium SAND,	
							18	little fine gravel, trace silt SP-SW	
					4		30		
				3		0.8	20	WOOD	
					5		10		
							11		
					6		10		
MST	MOD	LSE	NP	4		0.9	6	Black gray fine to coarse SAND, little fine	
					7		4	gravel, trace silt SP-SW	
							4		
					8		4		
MST	MOD	LSE	NP	5		1.3	6	8-9.5 SAME	
					9		4		
	WEL						4		
MST	WEL	LSE	NP	6	10	NR	5	9.5-10 Gray fine to medium SAND, little silt	
							7	SP	
					11		6		
							4		
MST	WEL	MED	SP	7	12		5		
		STF				0.6	4	Gray SILT and CLAY, trace organics OH	
					13		4		
							4		
MST	WEL	STF	SP	8	14		5		
						0.9	5	14-15 SAME	
SAT	WEL	LSE	NP		15		4		
							6	15-16 Gray fine SAND, some silt SW	
SAT	WEL	MED	NP	9	16		7		
		DNS				0.3	7	SAME	
					17		6		
							7		
SAT	WEL	LSE	NP	10	18		13		
						1.0	4	SAME	
					19		4		
							4		

New York State Office of Parks, Recreation and Historic Preservation
Historic Preservation Field Services Bureau
Peebles Island, PO Box 189, Waterford, New York 12188-0189 518-237-8643

Bernadette Castro
Commissioner

September 25, 2003

Alan Oppenheim
Whiteface Meadows, LLC
58 Washington Street
Saratoga Springs, New York 12866

Re: SEQRA/CORPS
The Harbor at Beacon Pointe
Hudson River and Normanskill Creek,
off River Road/Albany County
02PR05799

Dear Mr. Oppenheim:

Thank you for requesting the comments of the State Historic Preservation Office (SHPO). We have reviewed the project in accordance with Section 106 of the National Historic Preservation Act of 1966.

SHPO has received the report "Additional Phase 1B Archaeological Survey, The Harbor at Beacon Pointe Proposed Development, Town of Bethlehem, Albany County, New York" prepared by Edward Curtin in September 2003. Based upon our review of this report and previously submitted information, it is the SHPO's opinion that your project will have No Effect upon cultural resources in or eligible for inclusion in the National Registers of Historic Places.

If further correspondence is required regarding this project, please be sure to refer to the OPRHP Project Review (PR) number noted above.

Please contact me at extension 3291 if you have any questions regarding these comments.

Sincerely

Douglas P. Mackey
Historic Preservation Program Analyst
Archaeology

Cc: Jeffery Lipnicky, Town of Bethlehem

McFarland Johnson
Innovative Solutions / Sustainable Results

60 Railroad Place • Suite 402 • Saratoga Springs, NY 12866
Phone: 518-580-9380 • Fax: 518-580-9383
www.mjinc.com

November 20, 2018

New York State Historic Preservation Office
Peebles Island State Park
P.O. Box 189
Waterford, New York 12188-0189
Attn: Daniel Bagrow

Re: Information Requested
Albany Port District Commission Industrial Park Project
Beacon Island Property

Dear Mr. Bagrow:

On behalf of the Albany Port District Commission, we respectfully submit the following responses in support of the above referenced project:

1. Attached to this request is an excerpt from the previous archaeological surveys showing the tested area. Please clarify (in text and with a site plan) what specific proposed project components will be outside of this tested area. It appears that some utilities and the north and south access roads are outside of the tested areas.

   Response: The project area and limits of testing in the original 2002-2003 project is the same project area proposed in our current design. Attached are two figures, one from the "Additional Phase 1B Archaeological Survey" completed by Edward V. Curtin in September 2003 titled "Figure 2. Schematic of Proposed Site Plan", and the other is our current Port of Albany Industrial Park concept design titled "Concept A". As indicated on the figures, the north and south access points are the same locations in both projects, proving that the project areas are the same as the initial SHPO review and determination of no effect. Therefore, no area outside the original agreed to limits of testing are to be disturbed as part of the current proposed project.

2. Who are your permit reviewers at the US Army Corps and DEC?

   Response: Our permit reviewers are Andrew Dangler from the US Army Corps and Nancy Baker from the NYSDEC.

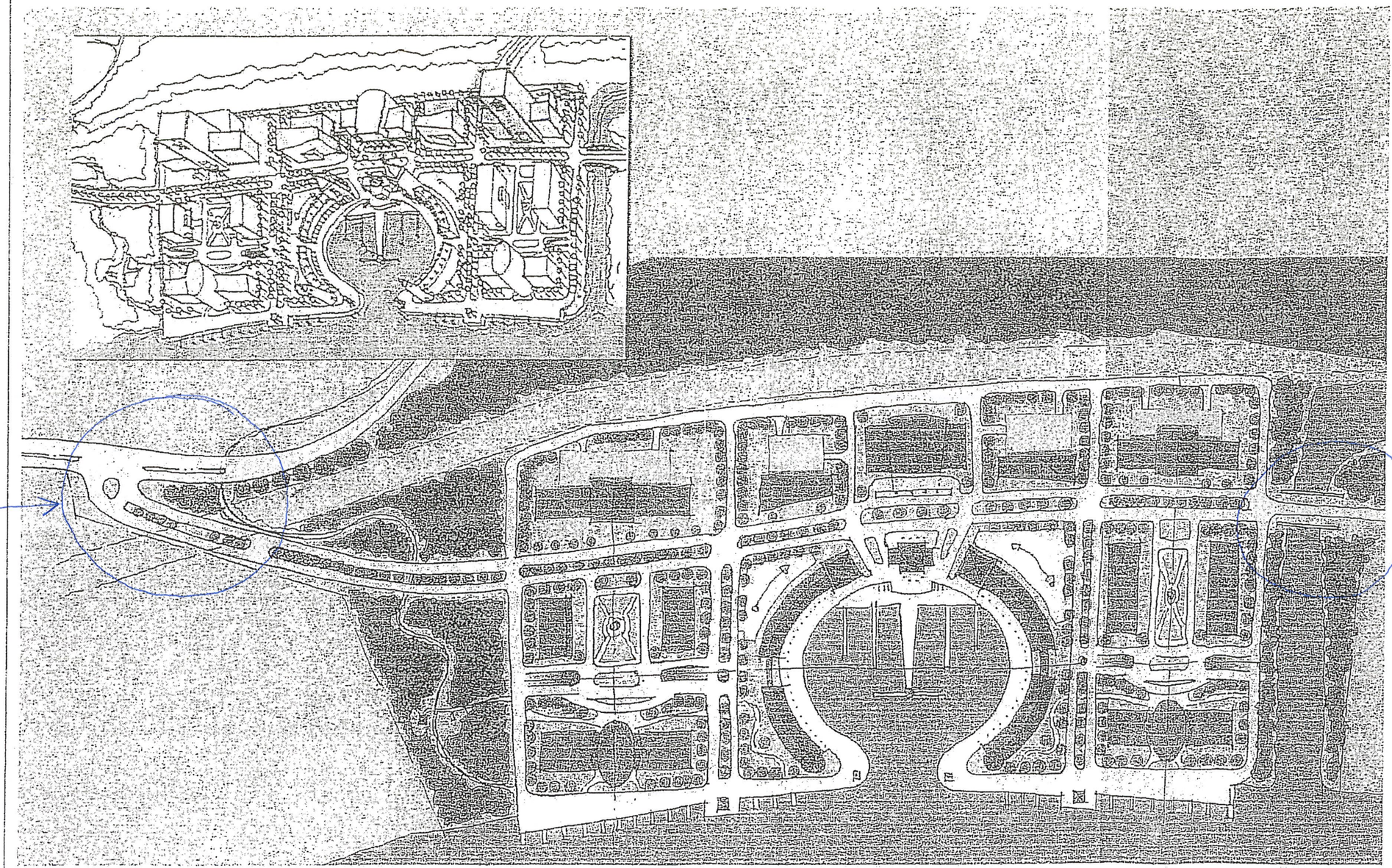
3. What approvals/licensing/funding do you need from OGS and DOT? They are included in the list of involved agencies.

Response: The project will need approval from OGS regarding any potential dredging work required as part of the proposed wharf construction and approval of the bridge over the Normans Kill. The DOT will need to approve the traffic impact study, to be completed as part of the GDEIS, and a highway work permit for the curb cut at the south access connection to the NYS Route 144 (River Road).

If you have any questions related to the enclosed information or if you require additional information, please contact our office.

Sincerely,
McFarland-Johnson, Inc.

Ashley Erdmann, PE
Civil Engineer



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D:\2000\00076_Bearcat PUD\Dpresent\Srcolor1.dwg Wed Jan 23 10:41:45 2002

THE HARBOR at BEACON POINTE

for

BEACON POINTE L.L.C.

TOWN of BETHLEHEM ALBANY COUNTY, NEW YORK

Dominick Ranieri Architect

100 Sitterly Road • Clifton Park • New York 12065
Phone: (518) 371-8626 • Fax: (518) 371-8714

FIGURE 2: SCHEMATIC OF PROPOSED SITE PLAN

PROJECT DATA

1. APPLICANT:
ALBANY PORT DISTRICT COMMISSION
106 SMITH BOULEVARDS
ALBANY, NEW YORK 12205

2. CURRENT LAND OWNER:
BEACON HARBOR, LLC, C/O JAMES G. HORVATH
PO BOX 932
LATHAM, NEW YORK 12110

2. EXISTING ZONING: HEAVY INDUSTRIAL

3. LOT AREA: 81.62 ACRES (3,555,289 SF)

INDUSTRIAL BUILDING PARKING:

1 SPACE FOR EACH 1,0000 SQUARE FEET OF GROSS FLOOR AREA

TOTAL SQUARE FEET PROPOSED = 1,130,000

REQUIRED:
1100 TOTAL SPACES REQUIRED

PROVIDED:
CAR PARKING 600 TOTAL SPACES PROVIDED
TRUCK PARKING 500 TOTAL SPACES PROVIDED
1100 TOTAL SPACES PROVIDED

ADA SPACES REQUIRED:
PER 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN

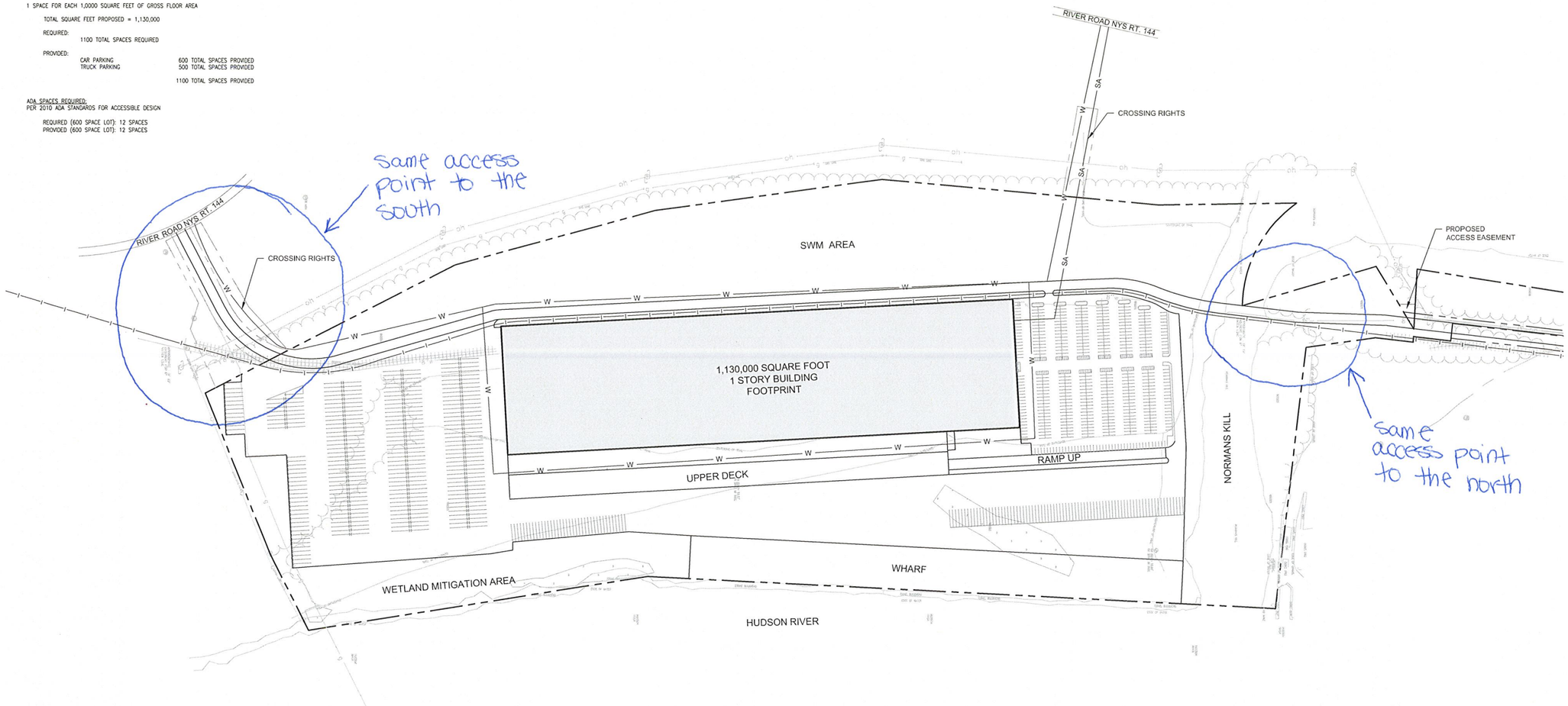
REQUIRED (600 SPACE LOT): 12 SPACES
PROVIDED (600 SPACE LOT): 12 SPACES

ZONING:

EXISTING: ±81.62 ACRES HEAVY INDUSTRIAL

PROPOSED: ±81.62 ACRES HEAVY INDUSTRIAL

TAX ACCOUNT NUMBERS: 98.00-2-10.23
98.01-2-1



IN ASSOCIATION WITH:
LOUIS BERGER GROUP, INC.

0 150 300 450 FT
SCALE

PLANNING BOARD ENDORSEMENT

McFarland Johnson
60 RAILROAD PLACE
SUITE 402
SARATOGA SPRINGS, NEW YORK 12866
P:518-580-9380 F:518-580-9383
mjinc.com

PROJECT MILESTONE
CONCEPT SITE PLAN

NO.	DATE	DESCRIPTION

CLIENT:
ALBANY PORT DISTRICT COMMISSION
BETHLEHEM, NEW YORK

PROJECT:
PORT OF ALBANY EXPANSION
BEACON ISLAND, SOUTH PORT ROAD

DRAWN	NSO
DESIGNED	NSO
CHECKED	SMB
SCALE	1"=150'
DATE	OCTOBER 2018
PROJECT	18437.00

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECT DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

DRAWING TITLE
CONCEPT A

DRAWING NUMBER
G-03

ADDITIONAL ARCHAEOLOGICAL EVALUATION
PORT OF ALBANY EXPANSION
BEACON ISLAND
TOWN OF BETHLEHEM, ALBANY COUNTY, NEW YORK

Prepared for

McFarland-Johnson, Inc.
80 Railroad Place, Suite 402
Saratoga Springs, New York 12866

Prepared by

Curtin Archaeological Consulting, Inc.
61 Rowland Street
Ballston Spa, New York 12020

Report Authors:

Edward V. Curtin, Ph.D.
Kirsten Dymond, B.A.

December 2018

MANAGEMENT SUMMARY

SHPO Project Review Number: 18PR07273

Involved State and Federal Agencies: Corps

Phase of Survey: Phase 1A

Location Information
Location: Beacon Island, Route 144
Minor Civil Division: Bethlehem
County: Albany

Survey Area
Length: North Entry Road: 236 m (774 ft)
Utility Corridor: 62 m (203 ft)
South Entry Road: 98 m (322 ft)
Width: North Entry Road: 74 m (243 ft)
Utility Corridor: 160 m (525 ft)
South Entry Road: 128 m (420 ft)
Number of Acres Surveyed: 3.7 a (1.5 ha)

USGS 7.5 Minute Quadrangle Map: Delmar

Archaeological Survey Overview
Number and Interval of Shovel Tests: n/a
Number and Size of Units: n/a
Width of Plowed Strips: n/a
Surface Survey Transect Interval: n/a

Results of Archaeological Survey
Number and Name of Prehistoric Sites: 0
Number and Name of Historic Sites: 0
Number and Name of Sites Recommended for Phase II/Avoidance: 0

Results of Architectural Survey
Number of buildings/structures/cemeteries within Project Area: 0
Number of buildings/structures/cemeteries adjacent to Project Area: 0
Number of previously determined NR Listed or Eligible buildings/structures/cemeteries/districts: 0

Report Authors: Edward V. Curtin, Ph.D. and Kirsten Dymond, B.A.

Report Date: December 2018

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Scope of Work 1
SUMMARY OF PREVIOUS INVESTIGATION 1
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North Entry Road 2
Utility Corridor 3
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REFERENCES 4
APPENDIX A: FIGURES 6
APPENDIX B: PHOTOS 10

INTRODUCTION

Project Location and Description

Pursuant to the Port of Albany expansion onto Beacon Island, McFarland-Johnson, Inc. has retained Curtin Archaeological Consulting, Inc. to conduct an additional archaeological evaluation of prior disturbance and archeological sensitivity of three areas of concern to the New York State Historic Preservation Office (SHPO). These are locations where roads or utilities would enter the proposed port expansion project and are referred to here as the north entry road, the utility corridor, and the south entry road. The general location of the survey is shown in Figure 1. The APE is shown in Figures 2-3. SHPO had previously issued a no effect determination for the area of port expansion when this area was under consideration for an earlier project (The Harbor at Beacon Pointe) but has recently identified the need to evaluate the areas of concern because they were not covered in the earlier archaeological investigations.

Scope of Work

The scope of work for this evaluation has been developed based upon consultation between McFarland-Johnson, Inc. and the SHPO (e.g., email from Dan Bagrow to Steve Boisvert, December 7, 2018; email from Ashley Erdmann to Dan Bagrow, December 10, 2018; Dan Bagrow reply by email to Ashley Erdmann, December 10, 2018). It also relies upon Dr. Edward V. Curtin's familiarity with the previous surveys by Edward V. Curtin, Consulting Archaeologist of Beacon Island and the adjoining area that has been referred to previously as Beacon Heights (Curtin and Schreyer 2002; Curtin 2003; Nelson 2006; Nelson and Curtin 2006; Schreyer and Curtin 2002). Beacon Heights was a proposed project where a Native American chert quarry was found in a Normanskill shale formation. This quarry is located in the upland west of Route 144, southwest of the present project's south entry road.

SUMMARY OF PREVIOUS INVESTIGATION

Extensive Phase 1A and Phase 1B investigation was performed in consultation with SHPO in 2002-2003. Stated succinctly, the Phase 1A investigation found that the project proposed at that time, known as The Harbor at Beacon Pointe, would be constructed on fill covering an earlier landscape-riverscape that was composed of areas that had been islands and river channels. The islands were viewed as unstable due to shifts in their location, size and configuration over time. In addition to these shifting islands, an inner channel of the Hudson River referred to as Island Creek was below the fill on the west side of the project site, and other smaller channels and open river was below the fill in other places. Based upon these findings, a shovel test survey was not performed but a series of backhoe trenches were cut in locations that potentially represented stable land surfaces. If such surfaces existed and had persisted over a significant amount of time, there was a potential to find precontact or contact period Native American archaeological sites. It is noted that early historic period sites were not shown on Beacon Island on 18th-19th century historic maps and are unlikely to occur. Following review of the Phase 1B survey report, SHPO review archaeologist Douglas Mackey requested a review of boring logs and additional backhoe testing if archaeological sensitivity was indicated in this review. Pursuant to Mr. Mackey's request, 18 boring logs were reviewed. The review of the boring logs substantially confirmed that Beacon Island is composed of fill overlaying soils that do not have archaeological sensitivity (Curtin 2003:7). Nonetheless, soil anomalies in two proximal soil borings in the southeastern section of Beacon Island were targeted for additional backhoe trenches in case these anomalies indicated the potential for archaeological site occurrence below the fill in this area. The results and recommendation were summarized in the 2003 Phase 1B report and the transmittal letter to SHPO. The following quote is from the summary in the 2003 report transmittal by Dr. Edward V. Curtin:

> I have enclosed the archaeological survey report for the above referenced project according to the scope of work we agreed upon previously. This report includes a review of the 18 soil boring logs available for the project area, and seven additional backhoe

excavations. The soil borings failed to disclose evidence of archaeological sites or archaeologically sensitive strata, but the backhoe cuts were deployed in the area of two anomalous soil borings where soil stratigraphy and contents required clarification. These excavations show that the soil boring anomalies are part of the variation in fill content, rather than potential archaeological sites. Therefore, I recommend no additional archaeological investigation for this project. I request your concurrence and a determination of no effect/no impact.

Although not mentioned in the 2002-2003 reports, there now seems to be a reasonable argument that the large Papscanee Island across the river became more stable at an earlier date than Beacon Island was before 20th century land-filling; and that higher dynamism may have affected the islands on the west side of the river as the Papscanee floodplain built to the west, causing the river current to curve in this direction in the vicinity of Beacon Island. This process appears to characterize the last several hundred years. This surmise is based upon several analyses including Curtin (2007), Funk (1997), Holloway (2007), Huey (1996), Lavin et al (1996) and Schuldenrein (1997).

PRESENT INVESTIGATION

The present investigation includes a field visit conducted on December 17, 2018 and an overview of information obtained during this visit, as well as information contained in the county soil survey and the previous archaeological survey reports. It is divided into considerations of the north entry road, the utility corridor, and the south entry road. The conclusion of this investigation is that the areas examined are not sensitive for the occurrence of archaeological sites. The north entry road and utility corridor locations are not archaeologically sensitive because of prior disturbance and because construction would extend through areas of fill over former creek and river bottoms. The south entry road is not archaeologically sensitive because it would begin at a cut bank along Route 144 and then cross steep slopes before crossing filled creek and river areas.

North Entry Road

The north entry road north of Normanskill creek will be built on disturbed soil described as Udorthents, loamy (Ug) in the county soil survey. These are “well-drained and moderately well drained, loamy soil material that resulted from man-made cuts and fills” (USDA 1992:94). Following the existing berm of an abandoned railroad bed, the proposed north entry road will cross this disturbed soil from the north to a crossing of Normanskill Creek (which has been rechanneled in this area). The north entry road will flow south into the previously surveyed part of the APE. Near here previous excavation trench 10 showed that ca. 1.5 m of cinder fill occurred above stream-bottom sediments that did not contain artifacts.

A review of the historic maps in the earlier Phase 1A survey for Beacon Island shows that the north entry road area is associated with historically unstable channel and island configurations similar to those documented on Beacon Island (Schreyer and Curtin 2002). Most often, the islands on these maps tend to occur along the Hudson channel east of the APE. The area of the APE covers the interior channel, an outlet for Normanskill Creek that later became known as Island Creek, along with unstable shorelines and island configurations bordering the creek on the east. A substantial island referred to as Cabbage Island first appeared on the 1893 USGS 15’ quad, and indicated by earlier maps, it contained no roads or structures. A road and structures first appeared on the 1927 USGS quad, and they are on the eastern shore, suggesting the western side of the island in the area of the APE continued to have flooding or erosion issues. The APE is considered to be on fill above creek bottom and unstable shoreline.

The several prior disturbances in and around the proposed northern entry road include the cuts and fill that created the Udorthents plus the construction of the berm and former bridge at the crossing. In addition, there are additional berms east of the railroad berm, and this material may include spoil from down-cutting at the stream crossing, where part of the railroad bridge

berm appears to have been removed. North of the creek crossing a leveled and constructed parking surface is immediately east of the railroad berm, and an uneven disturbed looking surface with smaller spoil piles is west of the railroad berm. The locations west and south of this area adjoin the rechanneled banks of Normanskill Creek. The rechanneled creek moves the creek's mouth south from its earlier mapped location opposite Westerlo Island and directs it eastward north of the filled Island Creek channel.

All of these factors indicate that the northern entry road area is not likely to contain archaeological sites. Photos illustrating the north entry road are shown in Appendix B.

Utility Corridor

The utility corridor will connect utilities along Route 144 by following a route along the northern edge of the De Martini Oil Equipment Services parking lot and then descending a steep slope through a preconstructed railroad underpass. The depth of construction in the parking lot area will be about 6 feet.

This area is considered previously disturbed for the following reasons: the corridor follows a preconstructed roadway across slopes leaving the De Martini parking lot and going through the railroad underpass, while in the De Martini parking lot it will cross built-land that is built over a valley containing a small stream. The built-land is approximately 10 feet deep at the road and deepens downslope to the east. This indicates that the utility lines will be built in fill crossing the parking lot. This built-land situation is obvious when compared to the width of the valley on the other side of Route 144 (as is photo-illustrated in Appendix B). It is also discernible when considering the prior ground contours shown on 7.5' USGS Delmar quad map (Figure 1; first published in 1953). Beyond the railroad underpass, the utility corridor passes across fill over old stream bottom in the area of the pre-fill Island Creek, a near-shore channel of the Hudson River.

Photographs found in Appendix B provide documentation of this area. Photos 19 and 20 look north and south to document the absence of Normanskill shale exposed in this area (Normanskill shale outcrops in road cuts along portions of Route 144 in Glenmont are known to contain Normanskill chert, a material used as raw material for tools in ancient times). As photo-documented, there are no surface exposures of Normanskill chert in the area of the utility corridor, and therefore no sensitivity here for the occurrence of Native American chert quarries. Also, these same photos show the slope trend, illustrating the need for cutting and filling eastward from the western road edge. In addition to this trend, land has been built northward into the stream valley, which is in the background of Photo 19 and shown along its northern edge in Photo 16.

The utility corridor is not considered to be archaeologically sensitive due to its construction in fill across the De Martini parking lot, prior disturbance at the existing roadway leading to and through the railroad underpass, and construction in fill over stream bottom at Beacon Island.

South Entry Road

A review of the APE on Figure 1 shows that the south entry road crosses a prominent ridge before descending very steep slopes to the filled river bottom now part of Beacon Island. The county soil survey (USDA 1992) describes the soil here as Nassau very channery silt loam, hilly, very rocky (NrD). This excessively drained soil is shallow, dominated by bedrock ridges, and contains bedrock exposures. Slopes vary from 15-25%.

The ridge is composed of Normanskill shale which protrudes through the soil in limited exposures within the APE, but which is significantly exposed to the north of the APE in an area that may have been mined in historic or recent times to obtain shale. Shale is also exposed in road cuts associated with Route 144 and a driveway entering the possible mine area from Route

144. This northern area was visited and photographed for comparative reasons in order to understand whether the bedrock in this area contains chert.

The APE at the south entry road is characterized by a cut bank backed by steep slopes along Route 144, and beyond this, more steep slopes, thin soil and exposed bedrock. There was no archaeological sensitivity assessed due to steep slopes, except for possible precontact period chert quarries. In order to address this concern, a careful surface examination for exposed chert or mine pits was made of the slopes in this area (the senior author is experienced with the features of varied chert quarries such as at Catskill Exit 21, Flint Mine Hill, West Athens Hill, and Flatly Brook, as well as the nearby Beacon Heights). No evidence of chert quarries was found. No chert at all was found in the exposed bedrock. In addition, a broader examination was made of the larger shale exposures to the north, but again, no chert was found in the shale bedrock. It thus seems likely that the surface or near-surface Normanskill shale in the vicinity of the south entry road does not contain chert. The search for evidence of chert quarries ended at the near-vertical drop to the old Island Creek channel. From this drop the proposed road crosses the disturbed railroad construction area and the filled Island Creek river channel. The south entry road area is photo-documented in Appendix B.

The south entry road is not considered to be archaeologically sensitive due to steep slopes, prior disturbance at the cut bank along Route 144, and the absence of evidence of chert quarries.

SUMMARY AND RECOMMENDATIONS

A complete and comprehensive evaluation of prior disturbance and other factors such as high slopes influencing archaeological sensitivity has been performed. Various areas of prior disturbance or where fills cover old river or stream bottom, or sloped terrain have been identified, while a search has been made of exposed Normanskill shale has been made to determine whether chert quarries exist, or whether the shale in this location is chert -bearing. Based upon the results of these considerations, archaeological sensitivity is lacking, and no evidence of potential chert quarries has been identified.

In accordance with these findings, no additional archaeological investigation is recommended.

REFERENCES

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1996 The Goldkrest Site: An Undisturbed, Multi-Component Woodland Site in the Heart of Mahikan Territory. In *A Northeastern Millennium: History and Archaeology for Robert E. Funk*, edited by Christopher Lindner and Edward V. Curtin. *Journal of Middle Atlantic Archaeology* 12:113-129.

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2006 *Phase 1B Archaeological Survey, Beacon Height Planned Development District, Town of Bethlehem, Albany County, New York*. Curtin Archaeological Consulting, Ballston Spa, New York.

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APPENDIX A: FIGURES

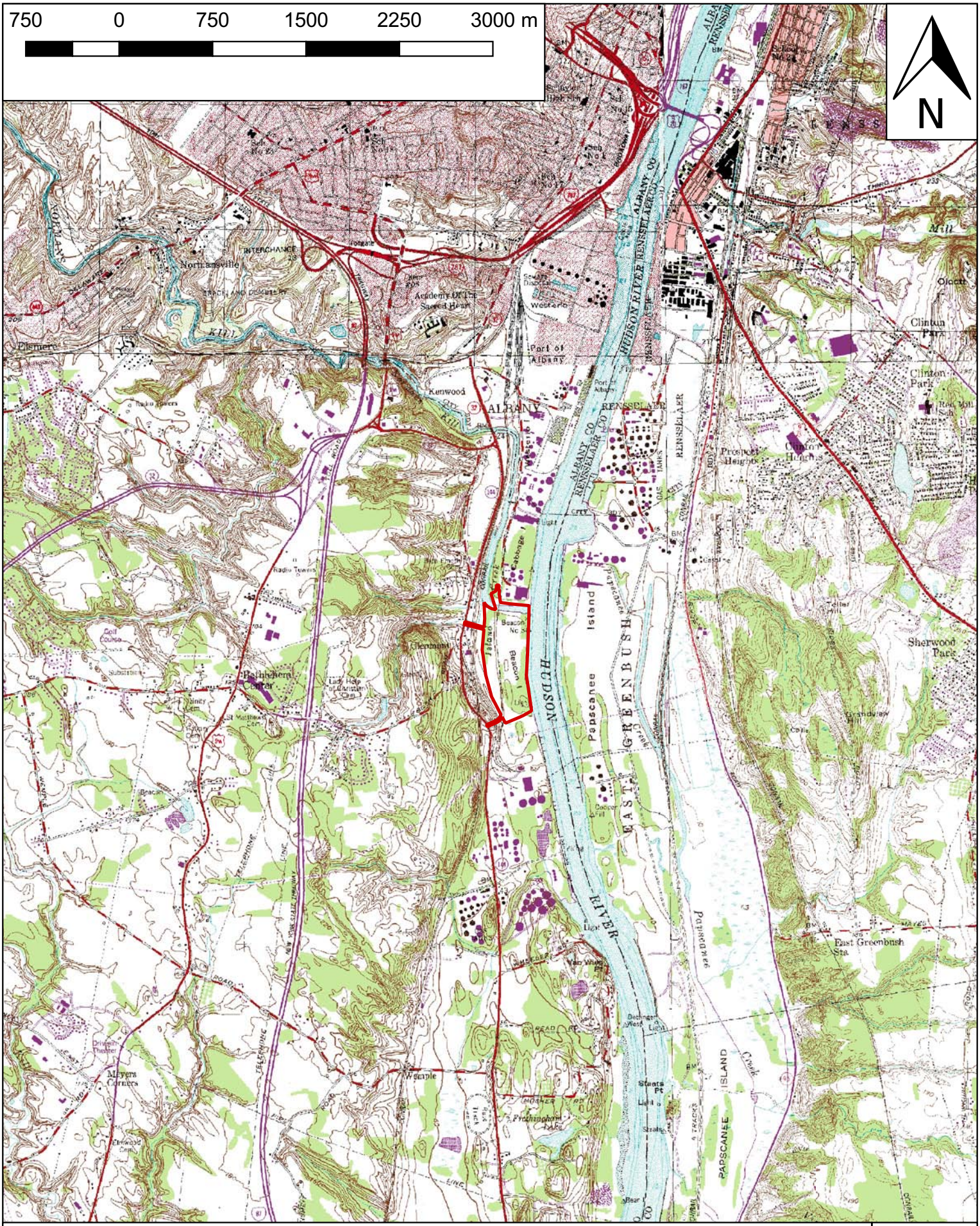


Figure 1: Area of potential effect on Albany USGS 15' minute quadrangle; 1:24,000 scale



Figure 2: Mapped soil units



Figure 3: Map showing photo angles

APE

APPENDIX B: PHOTOS



Photo 1: North entry road, looking south at the old railroad berm where the railroad bridge crossed the Normans Kill. The photo is centered on the stone fill or rip-rap exposed on the bank at the former bridge site.



Photo 2: North entry road, looking north/northeast at the former railroad's creek crossing. The railroad berm is left of the gap. Large spoil piles or another berm is right of the gap.



Photo 3: North entry road, looking north, centered on the railroad berm. The berm may have been removed in the foreground.



Photo 4: North entry road area, looking northeast at the end of the railroad berm north of Normankill Creek, with a presumed oil transmission pipe visible.



Photo 5: North entry road area, view looking north of the area immediately west of the railroad berm, north side of the creek.



Photo 6: North entry road area, detail of scene in Photo 5 showing uneven terrain including a small spoil pile (center), looking north.



Photo 7: North entry road area, looking north, detail of scene in Photo 5 showing uneven terrain including a spoil pile (center).



Photo 8: North entry road area, looking north/northeast from near creek-side showing terrain associated with Udorthent cut and fills.



Photo 9: North entry road area, an extension of Photo 8 turned northeast.



Photo 10: North entry road, view looking north on top of the railroad berm north of the Normans Kill.



Photo 11: North entry road, looking north across the Normans Kill at the railroad berm (center) and adjoining terrain.



Photo 12: North entry road area, looking south along the railroad berm south of the Normans Kill.



Photo 13: Utility corridor area, looking west across the filled Island Creek toward railroad underpass.



Photo 14: Looking west at a closer view of the railroad underpass providing the utility corridor. The terrain rises sharply passed the underpass because the railroad was built on the bank of Island Creek (now-filled).



Photo 15: Utility corridor looking east showing the cut-down and paved approach to the railroad underpass. Looking east.



Photo 16: Utility corridor area, looking east at the bank adjoining a small stream just north of the proposed utility corridor, illustrating the depth of fill in this area (from the ground surface on the right to about the elevation of the stream).



Photo 17: Utility corridor area, looking south at the broad stream valley west of the Photo 16 location, illustrating the original width of the valley before filling to the east (at the project site across Route 144).



Photo 18: Utility corridor area, another view of the Photo 17 scene looking southeast, illustrating the depth of fill (e.g., around the culvert).



Photo 19: Utility corridor area (perpendicular to the highway) looking north along Route 144 illustrating the lack of Normanskill shale exposures in this area.



Photo 20: Utility corridor area (perpendicular to the highway) looking south along Route 144 illustrating the lack of Normanskill shale exposures in this area. Photos 19 & 20 also show the preconstruction slope trend: a relatively steep slope has been cut on the west and filled over on the east.



Photo 21: South entry road, looking northeast at the roadside cut bank and steep slope along Route 144.



Photo 22: South entry road, looking north at the steep slope and thin soil over bedrock crossed by road route.



Photo 23: South entry road area looking north, another view of the steep slope and thin soil over bedrock (which is exposed in this photo).



Photo 24: South entry road area looking south, showing the steep slope and thin soil over bedrock.



Photo 25: South entry road area, view looking down the near vertical slope toward the former Island Creek (now filled).



Photo 26: Just north of the south entry road area, alternative view looking down the near vertical slope toward the former Island Creek (now filled). The railroad track below the cliff runs along the creek bank.



Photo 27: Just north of the south entry road area, alternative view looking north along the near vertical slope toward the former Island Creek (now filled). The railroad track below the cliff runs along the creek bank.



Photo 28: Just north of the south entry road. Looking west/southwest at a cut shale bank in a possibly mined area. Shale in this area was more visible than in the APE and was examined to identify whether shale in this area is chert bearing.



Photo 29: A long view looking north at exposed shale just north of the south entry road. This appears to be a cut mine face.



Photo 30: A closer view of the Photo 29 scene looking north.



Photo 31: Just north of the south entry road, view looking north at the cut shale face along the driveway leading into the apparently mined area. This is one of the several shale exposures here and in the south entry road route that were examined to identify whether shale in this vicinity is chert bearing (it proved not to be).

NEW YORK STATE OF OPPORTUNITY. | Parks, Recreation, and Historic Preservation

ANDREW M. CUOMO
Governor

ROSE HARVEY
Commissioner

January 28, 2019

Mr. Steven Boisvert, PE
Director of Civil/Facilities Division
McFarland Johnson
60 Railroad Place
Suite 402
Saratoga Springs, NY 12866

Re: USACE
Albany Port District Commission Industrial Park Project
City of Albany & Town of Bethlehem, Albany County
18PR07273

Thank you for requesting the comments of the New York State Historic Preservation Office (SHPO). We have reviewed the *Additional Archaeological Evaluation Report*, prepared by Curtin Archaeological Consulting and dated December 2018, in accordance with Section 106 of the National Historic Preservation Act of 1966. These comments are those of the SHPO and relate only to Historic/Cultural resources.

Based on this review and a review of our GIS Cultural Resource Information System (CRIS), the SHPO requests that the following items be submitted to help facilitate the Section 106 consultation between the CORPS, the SHPO and the Stockbridge Munsee-Mohican Nation.

- A summary table detailing the various construction components and their proposed depths.

- A map of the project area, preferably the Concept Plan, that includes the locations of the soil borings and archaeological trenches discussed in the *Additional Archaeological Evaluation Report* with the depth of fill labeled for each boring or trench. This summary document will create a more easily understood picture of past filling events.

- A review of the CRIS system indicates that your project is across the river from agricultural fields associated with the National Register eligible Papscanee Island Historic District. As noted in the attached Determination of Eligibility for Papscanee Island, “The rich soil along the flats and on Papscanee Island were flooded annually and generations of Mohicans cleared and cultivated these areas.” These open agricultural fields make the area visually unique and would have been recognizable to the Mohican Sachem Papsickene.

To help address the potential visual impacts of the project on the Papscanee Island Historic District, we recommend a visual simulation, from the public right-of-way as shown in yellow on the enclosed map, be provided to help illustrate how the proposed facility will appear from the

•To reduce the visibility of the building on the Papcanee Island Historic District, we recommend that you consider using façade materials that are non-reflective and blend into the surrounding environment, such as earth tones.

• The SHPO requests that a site visit be arranged that would include individuals from the CORPS, the DEC, the SHPO, the Stockbridge-Munsee Mohican Nation and the project team.

If you have any questions, I can be reached at (518) 268-2179.

Sincerely,

Nancy Herter

Nancy Herter
Archaeology Unit Program Coordinator

RESOURCE EVALUATION

DATE: November 25, 2009	STAFF: Blakemore/Herter
PROPERTY: Papscanee Island	MCD: East Greenbush (08303) Schodack (08313)
ADDRESS: N/A	COUNTY: Rensselaer
PROJECT REF: 05PR06202	USN: 08303.000010/08313.000018

I. ☐ Property is individually listed on SR/NR:
name of listing:

☐ Property is a contributing component of a SR/NR district:
name of district:

II. ☒ Property meets eligibility criteria.

☐ Property contributes to a district which appears to meet eligibility criteria.

Pre SRB: ☒ Post SRB: ☐ SRB date

Criteria for Inclusion in the National Register:

A. ☒ **Associated** with events that have made a significant contribution to the broad patterns of our history;

B. ☒ **Associated** with the lives of persons significant in our past;

C. ☐ Embodies the distinctive characteristics of a type, period or method of construction; or represents the work of a master; or possess high artistic values; or represents a significant and distinguishable entity whose components may lack individual distinction;

D. ☒ **Have** yielded, or may be likely to yield information important in prehistory or history.

STATEMENT OF SIGNIFICANCE:

Papscanee Island is historically and archeologically significant for its association with upper Hudson Valley's predominant native people, the Mohican, who are currently recognized as the Stockbridge-Munsee Community Band of Mohicans. The pre 20th century island is historically significant as a center of life for this cultural group in New York where it served as a primary gathering spot and place of ceremony. The island is also archeologically significant for the potential it possesses to provide significant information about the life ways of its inhabitants and also for the information that has already been acquired through the archeological record.

The island is located in the floodplain of the Hudson River, in the Town of East Greenbush, Rensselaer County. It is about 4 miles long and about a half mile across, with the Papscanee Kill separating it from the mainland. A strip of additional fertile land lay east of the kill that was another half mile at it widest. (Huey 2004). In the 19th and 20th century, filling of the channel behind the dike resulted in an expansion of the island's western shore and silting between the island and the mainland has resulted in wetlands that have obscured the original island configuration. The tidal estuary Cuyper Kill originally separated the small Cuyper Island from the western shore of Papscanee Island until alluvium began to fill the channel in the late 1750's creating a single landform (Huey 1996: 137).[1]

[1] The boundary for the Determination of Eligibility includes an area, which based on historic maps best represents the historic limits of Papscanee Island prior to its connection to the eastern shore of the Hudson River.

The Mohican Indian Nation was the most populace Indian Nation in the Upper Hudson upon the arrival of the Dutch. Historic documentation provides evidence that when Hudson arrived in 1609, he was well within the Mohican territory which extended throughout the Upper Hudson (Dunn: 1994, 54). Hudson was greeted by the Mohicans who provided land for Dutch use and maintained a peaceful coexistence with the Dutch (Dunn 1994:63). At the time of Dutch arrival they had claim to "16,000 morgens of mountain and valley and 1200 morgens of cleared land" (Van Laer, 1908). The 2400 acres of cleared land included Papscanee Island. When the Dutch farmers came upriver in 1637, they were able to immediately plant on the previously cleared land. (Dunn 1994:226).

Papscanee Island was the home of the Mohican Sachem, Papsickene, who also controlled other smaller nearby islands and some of the adjacent mainland. A territory associated with a particular sachem was often mentioned in the Dutch deeds. One example of a fertile territory bearing the name of the chief, Papsickene's Island and "Paep-sykenekaes kill" is shown on the 1632 map. Numerous Dutch documents, letters and land references refer to Papsickene's land. (Dunn: 1994, 54) Papsickene's importance during the 17th century is reflected in how the Mohicans interacted with the Dutch, as the sachem's decisions meant the difference between war and peace. Prosperity for the newcomers depended on the relationship of the native population with the Dutch but also to other native groups. The status of the sachem seems evident in that Papsickene's son in the historic record is referred to as "the son of Papsickene". After Papsickene's death in 1634, three years lapsed before the island was acquired from his heirs by Kiliaen Van Renseelaer, who had repeatedly sought to obtain the land.

The Mohican people consider Papscanee Island to be a historic property of religious and cultural significance based on its direct association to the sachem Papsickene, for its importance as a place of traditional ceremonies and for its direct connection to their ancestors. The following presents the view of the Stockbridge Munsee Community Band of Mohicans:

> "The homes of the Mohican Chiefs, or Sachems were places of spiritual and ceremonial rituals. The Sachem was looked upon as a great tree in whose shade the whole nation sat. His business was to contemplate the welfare of his people, promote peace and happiness with all of their allies. The sachem kept the bag of ceremonial wampum and the pipe of peace.
>
> The wampum was used to track treaties, stories and important events in the tribe's history. In the years before contact and for 150 years afterwards, all collective knowledge had been memorized. To assure that traditions and treaty obligations were not forgotten, at regular intervals, conferences were held to recite and memorize the Nation's past. Both young and old were expected to participate in this tradition. This could take as long as two months. Tribal members gathered together at certain seasons, and the historian taking a piece of wampum from the bag, repeated aloud its meaning, and passed it to the person who sat next to him, who then repeated the story. Each piece of wampum and story was passed to each tribal member.
>
> It was not just pieces or strings of wampum, but also elaborate belts were made to mark a treaty with government officials, and other tribes. The belt told the story of the event. The belt was also used to invite a tribe to join in a war, or mark death. It is the native way of documenting its history, and held in great importance. The sachem had a bag which was made special to hold wampum and wampum belts. It was his responsibility to keep these in his home. When a sachem dies his responsibility to care for the wampum was passed to the next sachem. (Jones: 1854, 21)
>
> Turtles have a great value to the Mohican people. Many Lenape Tribes, of which Mohican belong, have a creation story. It is believed the earth is resting on the back of a giant turtle lying in the water. From the soil on the turtle's back there grew a tree that sent forth a sprout that produced the first man. Then bending over, the top of the tree touched the earth and another sprout grew and this became the woman. These two people where the original parents for all Lenapé Indians.

> The turtle did not just give us life but helped to sustain life. The shell of the turtle was used as cups and dishes. The shell was also used as rattles in spiritual and ceremonial rituals. The animal world is believed to be one with us and we must treat them with dignity and respect. In the spirit world, the destiny of the Indian is linked with the animal.
>
> The importance of the turtle is not just spoken about, but displayed daily in our tribal affairs. The turtle is on our tribal flag, letterheads, and part of our daily lives. In our clan system, one of the clans is a turtle. The painted turtle which is symbolic with Mohican people still exists on this island today. Protecting the water ways to ensure this turtle does not become extinct is vital to the Mohican people.
>
> This island also holds known graves of our Mohican ancestors. Mohican people hold burials in extreme spiritual significance. Traditional Native beliefs are if graves are disturbed the spirit of this person can not continue their journey. Because of the tribe's strong beliefs in protecting its ancestors' graves, the tribe has an officer whose job is to protect their ancestors. With the knowledge that Papscanee Island was the home of our sachem, used as fishing and camping sites, and burials are known to be in situ we believe this island must be listed as a historic district to protect our tribe's rich history on this island. (White: 2009).

The rich soil along the flats and on Papscanee Island was flooded annually and generations of Mohicans cleared and cultivated these areas. The Van Rensselaer manuscripts reveal "that 1200 morgens of lands were enriched by the overflow of high water when the ice breaks" (Van Laer, 1908). Kiliaen van Rensselaer, when establishing his agricultural colony in New Netherlands, had his agent select desirable lands on the west side of the Hudson near Albany and a small tract on the east side. Papscanee Island attracted sufficient notice to be described in Johannes de Laet's book published in 1625: "...on the east side of the river live the *Mahikans*. On the same East side lies a long, broken Island (many kills run through it so that there multiple Islands) extending nearby...and the ships can come up this far" (Huey 2004: 64). Not being initially successful in acquiring Papsickene's lands in 1632, Kiliaen van Rensselaer wrote in 1636 to his agent in the New Netherlands who was responsible for getting farmers located, that "in case they (the farmers) should want to settle on PaepZickens land, which I think has not yet been bought, make every effort to purchase the same or at best to cause the farmers to be established there with the consent of the owners" (Waite 1913: 26).

After the Hudson's seasonal spring flooding, Papscanee Island would have been an ideal resource procurement site. New plant growth and abundant fish (perhaps collecting in the receding back water) provided a ready food source. With the introduction of maize agriculture into the Northeast during the Woodland Period, the Mohican people had an ideal location for the growing of crops, including beans and squash. While intensive cultivation normally depletes the soil, Papscanee Island was annually enriched with new soils.

The archeological data that exists for Papscanee Island have already provided significant information about precontact Native peoples, the Mohican people of the Woodland and Contact Periods, and later Dutch inhabitants. The hunter-gatherer model suggests that Native populations would disperse into smaller task based or family groups, depending on the season and available resources, and then come back together when it was logistically favorable for larger groups to function together-generally fall and winter. Various hypotheses have been presented on the model of Mohican Pre-Contact settlement. While some of the early maps show fortified villages, there have been no palisaded Mohican villages found to date. Another hypothesis is that small camps were used in addition to stockaded villages, or that unfortified household groupings were dispersed throughout the Mohican territory. (Sopko 2009: 7). The archeological sites that have been identified on Papscanee Island provide evidence that the Mohican's use of the island was extensive throughout the precontact and contact periods.

The earliest identified precontact occupation on Papscanee dates to the Late Archaic (2500 B.C. to 1500 B.C.) The Goldcrest Site (A08303.000050) was identified on the former Cuyper Island (now part of Papscanee) which was held by the Mohicans until 1661. The site dates to the Middle Woodland (A.D. 290 and A.D. 430) and to the Late Woodland/Contact Period (A.D. 1435 and A.D. 1660). Earlier burned deposits found below these occupations may reflect the initial Mohican land clearing process (Sopko 2009). A burial was encountered at this site,

suggesting that Papscanee Island was considered an appropriate location for burials and that other Woodland and Contact Period burials may be present elsewhere on Papscanee Island.

In addition to the recently identified East Greenbush Marina site (A08303.000093), there are 10 other recently identified Late Woodland Period and Contact Period Mohican sites on the island representing temporary agricultural camps, fishing camps and long term isolated farmsteads. Late Woodland pottery has been encountered on seven archaeological sites, with two sites representing different Late Woodland Period occupations. Three sites date to both the Contact and the Late Woodland Period and three sites are single component Lake Woodland occupations. Recovered materials include chert tools and flakes, hearth features, mussels, deer bones, fish bones, nut, structural remains and pottery. While these sites have many similarities, they also have many differences (Sopko 2009: 9).

The fact that new sites are being identified as a result of systematic archeological investigations, suggests that there are many more unidentified sites on the island that will yield significant information about the precontact period, the Mohican utilization and habitation of the island and the Mohican interaction with the Dutch during the Contact Period. Many Dutch farm sites are located on earlier Mohican sites, some of them below alluvial soils and fill. The Dutch farm sites have archaeological importance because they contain information on the earliest Dutch house types, individual living standards, trade contacts, and other significant research topics (Huey 2004:69). The Mohican's cultivated farmland on Papscanee Island may actually be the first European farms in New York State (Huey: undated). Some of this original farm land continues to be actively farmed.

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New York State, USDA FSA, DigitalGlobe, GeoEye, CNES/Airbus DS
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